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U.S. DEPARTMENT OF AGRICULTURE

Volume No. 3

EXPLANATORY NOTES

for

DEPARTMENT OF AGRICULTURE

BUDGET ESTIMATES

Fiscal Year

1945

CONTENTS

C O N T E N T S

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Pages

(a) WHITE PINE BLISTER RUST CONTROL

Appropriation Act, 1944	$1,900,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+362,375
Total anticipated available, 1944	2,262,375
Budget estimate, 1945	2,264,026
Increase	+1,651

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Leadership, coordination and technical direction of white pine blister rust control (Entomology and Plant Quarantine)	$475,946	$525,815	$526,315	+$500
2. Blister rust quarantine enforcement (Entomology and Plant Quarantine)	9,743	11,970	11,970	- -
3. Blister rust control operations on the national forests (Forest Service)	893,799	1,219,900	1,219,900	- -
4. Blister rust control operations on lands under jurisdiction of Interior Department (Department of the Interior)	149,451	202,522	203,173	+651
5. Cooperative blister rust control on State and privately owned lands (Entomology and Plant Quarantine)	283,790	302,168	302,668	+500
Covered into Treasury in accordance with Public Law 674	2,658	- -	- -	- -
Unobligated balance	185,613	- -	- -	- -
Total available	2,001,000	2,262,375	2,264,026	+1,651(1)
Anticipated deficiency for overtime pay	- -	-362,375	- -	
Total estimate or appropriation	2,001,000	1,900,000	2,264,026	

INCREASE

(1) The increase of $1,651 in this item for 1945 is for overtime pay required under the War Overtime Pay Act of 1943; $1,000 of this amount applies to Department of Agriculture funds, and $651 to funds for the Department of the Interior.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$75,985	$760	$760
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	52,000	362,375	364,026
Total cost of overtime (7 months in 1943)	127,985	363,135	364,786

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To control white pine blister rust in the white pine forest areas of the United States by the timely eradication of the disease-spreading alternate host plants (currants and gooseberries, commonly called Ribes) so as to preserve the present and future economic, aesthetic, and recreational values of these forest trees.

The Problem and Its Significance: The blister rust problem in the United States involves the suppression of Ribes on white pine control areas aggregating about 28,000,000 acres. These areas occur on the National Forests, National Parks, O & C Revested lands, Public Domain, Indian Reservations, and on State and privately owned lands. Federal, State and privately owned lands are often intermingled, and under such conditions the control work must be coordinated and operated as uniform work programs.

Completion of the initial control work will prevent serious losses of young growth from this disease. Also, reeradication is important in keeping Ribes on the decline in worked areas. This is accomplished by proper timing of reeradication to prevent Ribes from producing seed. As the initial work has been done over a period of several years, some of the worked areas are reaching the reeradication stage each year and should be promptly reworked to maintain the most effective control of the rust. Reworking keeps the Ribes population on the downward grade and safeguards the investment already made. In many control areas one reworking is enough to reduce the number of Ribes so low that the areas can be placed on a maintenance basis. Others require two or more reworkings. Once these areas have reached a maintenance basis, a small amount of work is needed each year to maintain the control status and to eradicate Ribes from new sites that are being taken over by natural reproduction and by forest plantings.

There are 8 species of native white pine in this country, three of which are of great economic value. The three commercial species are the eastern white pine which extends from Maine southward to Georgia and

westward to Minnesota, the western white pine of the northern Rocky Mountain region, and the sugar pine of Oregon and California. The mature stands of these trees have an estimated stumpage value of about $300,000,000. The young growth probably represents equal or greater values in potential future crops. Also, the white pines in general are highly important over extensive areas for park and recreational purposes and for watershed use on public and private lands. The conservation of the country's white pine resources is an integral part of a program to keep these forests productive and provide timber supplies which are recognized as important military assets. The control of blister rust is necessary to protect and conserve the supply of this valuable wood for present and future national welfare, to provide for the stability of white-pine-using industries, and to maintain employment and community welfare in white-pine-producing areas.

The white pines constitute a renewable forest resource of great importance to present and future forestry in this country. These forests are in serious danger from white pine blister rust, a destructive fungous disease of foreign origin that is now present in 27 States. The rust kills the white pines, the young trees dying quickly and the older trees more slowly. In unprotected areas the young growth and many of the older trees scattered through the forests are already succumbing to the disease. The fungus which causes blister rust spends part of its life cycle on currant and gooseberry plants. Spores produced on these plants infect white pines, and form bark cankers that kill the trees. Control is accomplished by the elimination of the currant and gooseberry bushes within and near white pines.

Blister rust control work is important on public and private lands where Eastern white, Western white, and sugar pines are significant and valuable components of the forests. Eastern white pine is commercially important over extensive areas from Minnesota to Maine and south to Georgia. On good sites this species is capable of producing from 20,000 to 30,000 board feet per acre in 60 years, and is one of the principal sources of income for owners of farm woodlots and forest lands. In eastern Washington, northern Idaho, and western Montana, the continued production of Western white pine is the backbone of local economy and essential to the maintenance of dependent industries and the production of valuable timber products for Nation-wide markets. Likewise, sugar pine is of high economic importance within its natural range in California and Oregon. These regions are sources of commercial timber supplies that must be protected from blister rust to safeguard present and future white pine forests and the industries for which they furnish the raw material.

General Plan: The white pine blister rust control work is conducted under the leadership of the Bureau of Entomology and Plant Quarantine in cooperation with other federal, State, private and local agencies. The Bureau carries the responsibility for the over-all planning, coordination, and technical direction of the work. It also determines the location and intensity of blister rust infection, develops and improves control methods, maintains effective standards of Ribes eradication, enforces the federal blister rust quarantine, and carries out surveys to locate and map white pine. Ribes eradication on State and

private lands is performed by the Bureau in cooperation with the agencies and individuals concerned. Authority for the removal of Ribes is provided under the plant pest laws and regulations of the cooperating States, which also are responsible for regulating the movement of Ribes and pines within the State.

The Forest Service is responsible for Ribes eradication carried out on lands under its jurisdiction, and the Department of the Interior for similar operations on lands under its administration, including the National Parks, Indian Reservations, and the Oregon and California revested lands.

White pine forest stands are selected for blister rust protection on the basis of minimum stocking requirements agreed upon by the cooperating agencies. These vary somewhat in accordance with forest practice in the different white pine regions. Such stands and their surrounding 900-foot protective zones are called control areas. The establishment of control areas for the protection of ornamental, recreational, or aesthetic white pine stands depends upon their value, importance, and use for such purposes.

The control areas are cleared of Ribes by laborers operating under close supervision. They are then checked by trained employees to make sure the Ribes have been reduced to a point that effectively establishes control of the disease. These control areas are reexamined at periodic intervals of about 4 to 6 years to locate areas reinfested by Ribes that may have developed from sprouts or from seeds in the soil, or from small missed bushes. Such areas are reworked to maintain continuous control of the rust. In the West, white pine forests are remote from centers of population, and the workmen have to be subsisted in camps within the control areas.

Progress and Current Program:

Adjustments due to the war: The war effort affected the progress of blister rust control work in several ways during the calendar year 1942. Within control areas there was a marked increase in white pine logging to meet the abnormal demands of war for this wood, and such cutting operations are usually followed by pine reproduction and Ribes. This changes the status of control areas and adds cutover lands to those requiring Ribes eradication for the protection of the new pine crop. The armed forces and war industries took many trained and experienced workers. Field operations were adjusted to meet war conditions by using labor outside draft age and not required by war industries or agriculture, and by reducing initial and increasing reeradication work in order to maintain control conditions on as much of the large acreage initially worked with emergency relief labor as is possible and, to this extent, protect the control investment already made by federal, State, and local cooperating agencies. The net result of the changes brought about by the war and the discontinuance of emergency relief labor previously available was a marked reduction in the amount of Ribes eradication.

Accomplishments of all cooperating agencies: The agencies cooperating in this program are the Bureau of Entomology and Plant Quarantine and the Forest Service of the Department of Agriculture; the National Park Service, General Land Office, and the Office of Indian Affairs of the Department of the Interior; the 27 affected States; and counties, townships, timber protective associations, lumber companies and individuals. The combined efforts of these agencies during 1942 resulted in the eradication of 20,296,528 Ribes on 1,038,311 acres of forest land, of which 631,110 acres were rework, and 407,201 acres initial eradication. A summary of these results by regions, programs, and land ownership is given in Tables 1, 2, and 3. The status of control by land ownerships is given in Tables 4, 5, and 6. Table 7 gives the progress of lands of all ownerships.

The number of workers used on Ribes eradication during 1942 was 4,312 of which 731 were relief labor, 3,324 seasonal employees of the Department and cooperating agencies; and 257 temporary and regular employees who supervised the labor used on this project. In carrying out the field work, 67 camps were operated in forest areas using temporary employees of the Department and cooperating agencies. The camps were distributed as follows: 43 in the western white pine region, 21 in the sugar pine region, and 3 in the North-central region. In addition, one camp was manned with WPA labor in the Southern Appalachian region. In forest areas where camps were unnecessary, the required seasonal labor was employed locally.

Bureau of Entomology and Plant Quarantine

Planning, coordination and technical direction: The Bureau continued to provide for the over-all planning, coordination and technical direction of the cooperative control work. The technical and supervisory organization was adjusted to war conditions by leaving unfilled some of the vacancies caused by draft or transfer, by asking temporary deferment only for key employees, by holding employment to a minimum, and by cooperating wherever possible to assist wartime forestry activities, such as fire control, fuel wood and lumber production programs. Emergency relief labor which has been used extensively on this work in recent years was not available during 1942 in the western white and sugar pine regions, but in the eastern white pine region Bureau-sponsored State WPA projects were carried on in several States. These projects were terminated either before or near the end of the year. The amount and quality of relief labor steadily diminished throughout the year and its availability varied greatly in different States and localities.

Control on State and private lands: On State and private lands, blister rust control was advanced during 1942 by the eradication of 10,497,356 Ribes on 896,997 acres, of which 345,997 acres was initial work and 551,000 rework. Removing these Ribes was of primary importance in protecting pines on State and private lands, but in some regions where these lands are intermingled with federal lands, the

work also afforded protection to the pines in federal ownership. The status of the work at the end of 1942 is shown in Table 6.

Eradication of Ribes nigrum: The eradication of the cultivated black currant, Ribes nigrum, in white pine regions resulted in the removal of 2,275 bushes from 367 locations. These plants are very susceptible to blister rust and one of the principal agents in the long-distance spread and local establishment of the disease. Their eradication supplements the application of control measures in white pine regions.

Treatment of diseased pines: Many white pines of high ornamental, recreational, and forest value have been attacked by blister rust within the infected regions. These trees can be saved, when the disease has not progressed too far, by cutting out the infected parts. Blister rust cankers were removed from 34,405 planted and ornamental pines, and 11,738 fatally diseased trees were destroyed.

Protection of white pine planting stock: Ribes eradication was carried on around 33 nurseries to protect 44,000,000 young pines growing in nursery and transplant beds. In this work 204,206 Ribes were destroyed on 12,778 acres of protective zones in initial and reeradication work to provide rust-free stock for planting and reforestation. A number of nurseries are now practically Ribes-free and are maintained in this condition by periodic inspection and by reworking any portions on which Ribes regenerate enough to endanger the pine.

Methods development: Improvement of control methods through development and testing of equipment, crew formations and chemicals and through field study of the ecology of Ribes and white pine were continued in the western white pine and sugar pine regions. In preliminary tests aqueous ammonium sulfamate showed promise as an effective herbicide on Ribes roezli. A portable preheating type burning torch was tested and successfully used for killing Ribes located in rock crevices. Chemicals were tested for enhancing the typical bark discoloration produced by the fungus around incipient cankers on white pine and color tests were devised which are useful in differentiating between diseased and healthy white pine tissue. Also, chemical tests and gross morphologic characters were established to aid field men in identifying underground parts of Ribes capable of sprouting. Large-scale field methods tests showed some advantage in special crew formations for working areas with few Ribes. In California, soils of low moisture equivalent and low carbon-nitrogen ratio were found to be poor Ribes sites. Further data were obtained from permanent study areas on the effects of logging, burning, grazing, and other disturbances on the regeneration of Ribes and white pine.

Quarantine enforcement: The examination of nursery stock enroute at key transfer points in the United States was continued as the primary means of securing compliance with the Federal domestic quarantine on account of white pine blister rust. These restrictions have been

instrumental in delaying the spread of the disease. Control measures are being applied cooperatively on a large scale in both infected and noninfected States. Current quarantine measures are designed (a) to protect two pine-growing regions in which the disease has not yet become established; one comprised of Arizona, Colorado, Nevada, New Mexico, Utah, Wyoming, and part of California; and the other Georgia, Kentucky, North Carolina, South Carolina, and Tennessee; and (b) to control the shipping of currant and gooseberry plants into 23 States which maintain blister rust control areas and in which the planting and growing of these plants in specified areas is prohibited as a measure of protection to white pine stands. During the past year 61 shipments consigned in violation of the quarantine were intercepted. The majority of these shipments consisted of currant and gooseberry plants moving without control-area permits into States which have established areas where the growing of these plants is prohibited or restricted in order to protect white pine stands, and therefore, constituted a hazard in the dissemination or establishment of the disease in such locations.

Spread of the rust: No important extension of the infected area occurred during 1942. In Virginia blister rust was reported for the first time on white pine in Allegheny county, on white pine and Ribes in Montgomery and Roanoke counties, and on Ribes only in Amherst and Craig counties. In the North-central region the rust continued to spread in unprotected areas, particularly in the northern part of the Lake States. Since 1937, rainfall has been abundant during the summer months and widespread infection has appeared on both host plants. This has been especially noticeable in northeastern Minnesota. Infected white pines were found for the first time in Gogebic, Ionia and Oscoda counties, Michigan; Marquette county, Wisconsin; and Koochiching county, Minnesota. Infection on Ribes was reported for the first time in Douglas county, Minnesota; and in Benton, Booner, Bremer, Buchanan, Cedar, Franklin, Iowa, Marshall, Osceola, Winneshiek and Wright counties, Iowa. These findings in Iowa extend the known area of Ribes infection to the West and South. In the sugar pine region of Oregon and California, weather conditions were generally unfavorable for the spread of the rust. Infected Ribes found at Brush Creek, Mendocino county, California, were probably due to overwintering of the rust near the Coast. This location extended the infected area in the Coast Range 10 miles farther south, or about 210 miles from the Oregon-California line. Within the infected portion of the control area in the sugar pine region, favorable localities for the occurrence of blister rust were scouted and old infection centers reexamined. Small centers of infection were found for the first time on sugar pine in several places. The Ribes were eradicated in the vicinity and the cankers removed from the infected pines to delay the spread and local intensification of the rust. This work resulted in the removal of 20,903 cankers from 2,675 diseased trees.

Forest Service

Control on national forest lands: Control work on national forests has covered some 2,860,632 acres out of the present known control

area of 4,108,839 acres. This leaves 1,248,207 acres of known infested areas still to receive initial control work as of January 1, 1943. 1,025,584 acres yet to be worked are in the West with 278,329 acres in the western white pine and 747,255 acres in the sugar pine region. During 1942, in the face of many handicaps and readjustments due to the war, a total of 28,903 acres were worked in the western white pine region, and 25,283 acres in the sugar pine region, or a total of 54,186 acres in the West.

In the eastern white pine areas the important job is to maintain the areas already covered and extend the work to cover white pine areas comprising 222,623 acres which have not been initially protected. A total of 55,671 acres of Ribes eradication and reeradication work was accomplished in 1942. The work was primarily of a maintenance nature and insured the continued effectiveness of much of the work of the past emergency programs. This was made possible by transferring to eastern areas some of the planned work made impossible by lack of labor in the West. The status of the work at the end of 1942 is shown in Table 4.

National Park Service

Control on national park lands: On lands under the jurisdiction of the National Park Service white pine blister rust control was advanced during the calendar year 1942 by the eradication of 1,647,540 Ribes on 26,701 acres, of which 21,230 acres were initial eradication work and 5,471 acres reeradication work. The bulk of the control work was accomplished in the sugar pine and western white pine regions where the major initial eradication work yet to be done on national park lands lies. Control work also was continued in the Northeastern and Southern Appalachian States.

Five-needled pines form an important part of the forest cover in 13 national parks, one recreational demonstration area, and the Blue Ridge Parkway. As the disease is becoming more widespread each year, it is imperative to protect the pines within these nationally important areas, otherwise the pines will be killed. The status of the work at the end of 1942 is shown in Table 5.

General Land Office

Control on O & C revested lands: On revested Oregon and California Railroad and Reconveyed Coos Bay Wagon Road grant lands under the jurisdiction of the General Land Office, white pine blister rust control was advanced during the calendar year 1942 by the eradication of 34,150 Ribes on 3,441 acres, all of which was initial eradication. Also 37,802 Ribes were eradicated from 4,665 acres of intermingled national forest lands by control crews under the supervision of the General Land Office. This work was entirely within the State of Oregon.

Considering that there are approximately 1,100,000,000 feet board measure of highly valued five-needled pines on O & C lands, any loss through the ravages of the white pine blister rust would greatly reduce the potential commercial value of these lands. The status of work at the end of 1942 is shown in Table 5.

Office of Indian Affairs

Control on Indian lands: On Indian reservations lying within the Lake States, white pine blister rust control work was advanced during the calendar year 1942 by the eradication of 160,778 Ribes on 1,010 acres. This control work was entirely reeradication work.

The total stumpage value of the five-needled pines within the forests of 12 Indian reservations is estimated to be approximately $1,720,000. Control work is decidedly essential if this natural resource is to be protected. The status of work on Indian reservations at the end of 1942 is shown in Table 5.

Table 1. Ribes Eradication Work during the Calendar Year 1942 (a)
(Initial and Reeradication)

Region	Initial Eradication (Acres)	Reeradi-cation (Acres)	Total (Acres)	Effective Labor (Man-Days)	Ribes Destroyed (Number)
Northeastern States	149,076	339,538	488,614	32,551	3,169,027
Southern Appalachian States	102,780	94,761	197,541	9,238	906,407
North Central States.	106,090	128,791	234,881	25,693	3,858,141
Western White Pine States (Idaho, Montana, Washington).	7,147	42,759	49,906	53,992	5,656,246
Sugar Pine States (California, Oregon).	42,108	25,261	67,369	40,452	6,706,707
Total	407,201	631,110	1,038,311	161,926	20,296,528

(a) Includes work of cooperating federal, State, and private agencies.

Table 2. Summary of Acreage worked in 1942 by Programs
(Initial and Reeradication)

Region	Regular and Cooperative Programs	State W. P. A. Programs	C. C. C. Programs	Total All Programs	Total Emergency Programs
Northeastern States	382,226	106,260	128	488,614	106,388
Southern Appalachian States	110,912	85,504	1,125	197,541	86,629
North Central States.	143,343	90,324	1,214	234,881	91,538
Western White Pine States	49,906	- -	- -	49,906	- -
Sugar Pine States	67,289	- -	80	67,369	80
Total	753,676	282,088	2,547	1,038,311	284,635

Table 3. Summary of Acreage Worked in 1942 by Land Ownership
(Initial and Reeradication)

Ownership	Eastern White Pine Region	Western White Pine Region	Sugar Pine Region	Total
Federal:				
National Forests	55,671	28,903	25,283	109,857
O&C Revested Lands	- -	- -	3,441	3,441
Other Public Domain	- -	305	- -	305
National Parks	9,969	3,197	13,535	26,701
Indian Reservations	1,010	- -	- -	1,010
Total Federal	66,650	32,405	42,259	141,314
State and Private	854,386	17,501	25,110	896,997
Grand Total	921,036	49,906	67,369	1,038,311

Table 4. Progress on National Forest Lands through 1942

Agencies and Regions	Ribes Eradication: Initial Eradication	Ribes Eradication: Reeradication	Ribes Eradication: Total	Status of Control: Total Control Area	Status of Control: Initially worked control area	Status of Control: Unworked control area
	Acres	Acres	Acres	Acres	Acres	Acres
Northeastern States	13,110	9,633	22,743	14,896	13,110	1,786
Southern Appalachian States	1,185,268	129,470	1,314,738	1,237,517	1,185,268	52,249
North Central States	259,078	53,135	312,213	427,666	259,078	168,588
Subtotal - Eastern Regions	1,457,456	192,238	1,649,694	1,680,079	1,457,456	222,623
Northwestern States (Ida.Mont.Wash)	1,041,032	243,182	1,284,214	1,319,361	1,041,032	278,329
Pacific Coast States (Calif.Ore.)	362,144	194,960	557,104	1,109,399	362,144	747,255
Subtotal - Western Regions	1,403,176	438,142	1,841,318	2,428,760	1,403,176	1,025,584
Total	2,860,632	630,380	3,491,012	4,108,839	2,860,632	1,248,207
Rocky Mt. States(Colo.Wyo.)(a)	36,619	1,962	38,581	421,000	36,619	384,381

(a) Experimental work with Relief labor to determine feasibility of control by Ribes eradication in these States.

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WHITE PINE BLISTER RUST CONTROL

Table 5 – Progress on Department of Interior Lands through 1942

Agencies and Regions	Ribes Eradication			Status of Control		
	Initial Eradication (Acres)	Reeradication (Acres)	Total (Acres)	Total Control Area (Acres)	Initially worked control area (Acres)	Unworked control area (Acres)
National Parks:						
Northeastern	25,516	9,655	(a)35,171	25,516	25,516	– –
Southern Appalachian	128,341	19,583	147,924	128,341	128,341	– –
Subtotal (East)	153,857	29,238	183,095	153,857	153,857	– –
Northwest	11,149	9,703	20,852	43,954	11,149	32,805
Pacific Coast	85,527	8,562	94,089	247,302	85,527	161,775
Subtotal (West)	96,676	18,265	114,941	291,256	96,676	194,580
Total – National Parks	250,533	47,503	298,036	445,113	250,533	194,580
Total – O&C Revested Lands						
Pacific Coast	33,524	– –	33,524	129,709	33,524	96,185
Indian Lands:						
Southern Appalachian	(b) 345	– –	345	345	345	– –
Lake States	76,573	39,697	116,270	96,416	76,573	19,843
Rocky Mountain	– –	– –	– –	(c)11,000	– –	11,000
Total – Indian Lands	76,918	39,697	116,615	107,761	76,918	30,843
Grand Total	360,975	87,200	448,175	682,583	360,975	321,608

(a) Includes Hickory Run Recreational Area. Initial eradication completed. Maintenance of control accomplished by periodic inspection of worked areas and reeradication of any portions on which Ribes regenerate enough to endanger pine.
(b) Cherokee Reservation – North Carolina.
(c) Shoshore Reservation – Wyoming.

WHITE PINE BLISTER RUST CONTROL

Table 6 - Progress on State and Private Lands through 1942.

Agencies and Regions	Ribes Eradication			Status of Control		
	Initial Eradication (Acres)	Reeradi-dation (Acres)	Total (Acres)	Total Con-trol area (Acres)	Initially worked con-trol area (Acres)	Unworked control area (Acres)
Northeastern States	10,740,525	3,991,123	14,731,648	12,767,042	10,740,525	2,026,517
Southern Appalachian States	4,117,256	323,176	4,440,432	4,171,090	4,117,256	53,834
North Central States. . . .	2,392,595	569,933	2,962,528	3,583,119	2,392,595	1,190,524
Subtotal Eastern Regions.	17,250,376	4,884,232	22,134,608	20,521,251	17,250,376	3,270,875
Northwestern States (Idaho, Montana, Washington)	821,656	191,643	1,013,299	1,113,730	821,656	292,074
Pacific Coast States (California, Oregon) . . .	417,395	153,566	570,961	1,044,910	417,395	627,515
Subtotal Western Regions.	1,239,051	345,209	1,584,260	2,158,640	1,239,051	919,589
Total.	18,489,427	5,229,441	23,718,868	22,679,891	18,489,427	4,190,464

WHITE PINE BLISTER RUST CONTROL

Table 7 - Progress on Lands in all Ownerships Through 1942

Regions	Total control area (Acres)	Initially worked Control Area (Acres)	Unworked Control Area (Acres)	Reworked Control Area (Acres)	% of Control Area Initially Worked
Northeastern Region. . . .	12,807,454	10,779,151	2,028,303	4,010,411	84%
Southern Appalachian Region	5,537,293	5,431,210	106,083	472,229	98%
North Central Region . . .	4,107,201	2,728,246	1,378,955	662,765	66%
Subtotal Eastern Regions	22,451,948	18,938,607	3,513,341	5,145,405	84%
Northwestern Region (Idaho, Montana, Washington)	2,477,045	1,873,837	603,208	444,528	76%
Pacific Coast Region . . . (California & Oregon)	2,531,320	898,590	1,632,730	357,088	36%
Subtotal Western Regions	5,008,365	2,772,427	2,235,938	801,616	56%
Total.	27,460,313	21,711,034	5,749,279	5,947,021	79%
Rocky Mountain States (a) (Colorado & Wyoming)	432,000	36,619	395,381	1,962	9%
GRAND TOTAL.	27,892,313	21,747,653	6,144,660	5,948,983	78%

(a) Experimental work to determine feasibility of control by Ribes Eradication in these States.

PASSENGER-CARRYING VEHICLES

No estimate is submitted for the purchase of passenger-carrying vehicles for the Department of the Interior or the Department of Agriculture for the fiscal year 1945. While the passenger cars already in use are, of course, gradually wearing out, it is felt that by extremely careful and economical use of them it will be possible to defer the necessity for replacements until the fiscal year 1946.

It is planned to continue 67 old vehicles in operation during 1945.

FOREST SERVICE

(a) General Administrative Expenses

Appropriation Act, 1944	$563,670
Anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943	+87,620
Total anticipated available, 1944	651,290
Budget estimate, 1945	625,000
Decrease	-26,290

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. General administration and business service	$581,911	$651,290	$625,000	-$26,290
Covered into Treasury in accordance with Public Law 674	1,744	- -	- -	- -
Unobligated balance	13,433	- -	- -	- -
Total available	597,088	651,290	625,000	-$26,290 (1)
Transferred to "Salaries and expenses, library"	+3,856	- -	- -	- -
Anticipated deficiency for overtime pay	- -	- 87,620	- -	- -
Total estimate or appropriation	600,944	563,670	625,000	

DECREASE

(1) The decrease of $26,290 in this item for 1945 consists of a reduction in the number of personnel employed in the Chief's office.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$13,099	$ 400	$ 400
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	27,944	87,620	84,965
Total cost of overtime (7 months in 1943)	41,043	88,020	85,365

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

The work under this appropriation provides for the leadership, coordination, planning and control of the program of work of the Forest Service, including its special wartime responsibilities. It provides also for the service and facilitating operations which are necessary in the central office relating to personnel management, information and education, drafting, business management, procurement, and finance and fiscal control, as well as for the necessary inspection and audit of field operations.

The organization of the general administrative divisions consists of the Chief's office proper, Personnel Management, Fiscal Control, Information and Education, Operation, and the sections of Forest Land Planning, Drafting and Photography.

The Forest Service has three major responsibilities in normal times, which must be supplemented during a war by a fourth. They are:

1. The protection, management, development and utilization of more than 175,000,000 acres of land within the national forests, equivalent to approximately 10 percent of the area of the continental United States.

2. The promotion of good forest practices, including the protection of forests, on the 428,000,000 acres of state and private lands.

3. Forest and range research for all forest and open range lands.

4. Development and operational activities in forestry and allied fields in furtherance of the war effort.

The primary function of the Forest Service is to carry out the responsibility of the Federal Government in working out solutions of the Nation's forestry problems.

On the national forests this means direct technical management for the production of timber, forage for range livestock, water, wildlife, and recreation. It means the protection of public and intermingled private lands from fire and tree diseases, as well as the integration of the management of all forests resources, in order that they will contribute as fully as possible to economic and social betterment. It means, in short, the administration of the national forests in the broadest public interest and the demonstration of proper forest and related land management.

On the privately owned forest lands, which in major part are being badly handled from a national point of view, it means leadership, planning, and coordination of technical information. It means cooperation with the states and private agencies in protection against fire, in forest planting, and in obtaining improved forest management practices.

The attainment of these objectives requires the conduct of a large amount of research in all phases of forestry and forest range management, both independently and in cooperation with other technical and industrial agencies. Research in the technique of protecting, improving, and utilizing the forest resources and in the profitable use of land for forestry is essential to the success of the activities on the national forests and private forest lands. This research deals with problems of broad regional or national scope rather than those of a purely local character and is conducted under the provisions of the McSweeney-McNary and Clarke-McNary Acts.

Operating in three broad fields of activity, through its many field and cooperators' offices, the Forest Service is confronted with a complex and unusually difficult general administrative problem. There are approximately 1,000 field offices of the Forest Service, the majority of which are "one-man offices", where the opportunities for personal contacts with other employees are infrequent. Under these conditions there must be a constant flow of information and instructions from the central office to the field on policy and other matters.

The work of the Forest Service is closely allied with that of many other Government agencies, particularly the Soil Conservation Service; Bureau of Entomology and Plant Quarantine; Bureau of Plant Industry, Soils and Agricultural Engineering; Bureau of Agricultural and Industrial Chemistry; Bureau of Agricultural Economics; Public Roads Administration; Fish and Wildlife Service; the Grazing Service; Agricultural Experiment Stations, etc. During the war period numerous agencies have been added to this list, including the Army, Navy, WPB, OPA, FEA, ODT, etc.

Because of its numerous fields of responsibility and resulting activity throughout the forested sections of all the states and territories, the Forest Service organization is of necessity, as well as a result of thorough study, test, and deliberate choice, very thoroughly decentralized. This policy and practice is illustrated by the Division of Fire Control, which has responsibility for leadership and control (a) over a field force of from 5,000 to at times more than 20,000 persons engaged primarily in fire control work, and (b) over expenditures up to 10 million dollars a year. This Division is composed in the Washington office of only 4 persons above the clerical grade. The other functional divisions in the main office are similarly restricted in size.

FOREST SERVICE

(b) National Forest Protection and Management

Appropriation Act, 1944	$14,987,947a/
Anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943	+ 2,417,007
Total anticipated available, 1944	17,404,954
Budget estimate, 1945	17,729,426
Increase	+ 324,472

a/ The Budget provides for the elimination of "Water rights" as a separate item, and the consolidation of that work under "National forest protection and management". This consolidation is recommended in the interest of simplifying the appropriation structure by eliminating a very small item (now less than $10,000); the work can very properly be handled and financed under this heading. Includes $9,410 transferred from "Salaries and expenses, Forest Service", water rights.

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. General management, operation, and regulation of national forest properties, including enforcement of Federal laws and regulations applicable to the national forests	$5,359,907	$5,994,077	$5,994,077	- -
2. Maintenance of improvements other than roads and trails (includes telephone lines, fences, lookout towers and observatories, firebreaks, offices, barns, garages, dwellings, outhouses, water developments, landing fields, etc.)	919,753	930,659	930,659	- -
3. Forest fire control, including prevention of fires and maintenance of a detection and "smokechaser" organization	3,922,660	6,771,386	6,771,386	- -
4. Control of tree-destroying insects and rodents on national forests	71,309	109,674	109,674	- -
5. Timber and forest products sales, free and administrative timber use, timber surveys, management plans, and timber stand improvement	1,571,721	2,013,428	2,361,900	+$348,472 (1

6. Allocation and issuance of grazing permits, supervision of range use by domestic livestock, range surveys and range management plans on national forests...	$ 489,790	$ 497,795	$ 497,795	- -
7. Protection of the wildlife resources, preservation of forest conditions conducive to the propagation of wildlife, reduction in number of game animals in overstocked areas, wildlife surveys, and management plans...	102,299	91,086	91,086	- -
8. Enforcement of sanitary laws, garbage disposal, policing, and other requisite measures for safeguarding health and safety of national forest users.	178,262	161,496	161,496	- -
9. Land use management on national forests, including rental of land, land classification; action on claims entered under public lands laws, location and posting of national forest boundaries; general surveys, plans and maps, serial photography; land exchange	505,050	520,226	520,226	- -
10. Protection, development, and management of the water resources of the national forests.	25,296	25,706	25,706	- -
11. Construction of improvements other than roads and trails (including telephone lines, fences, lookout towers and observatories, firebreaks, offices, barns, garages, dwellings, outhouses, water developments, pipe lines, public camp-grounds, landing fields, etc..	97,137	79,096	79,096	- -
12. Reforestation of denuded national forest areas, and plantation care	628,246	186,325	186,325	- -
Covered into Treasury in accordance with Public Law 674	48,965	- -	- -	- -
Transferred to "Salaries and expenses, Procurement Division", Treasury Department	+1,875	+24,000	- -	-24,000 (2)
Unobligated balance	10[illegible],251	- -	- -	- -
Total available	14,027,521	17,404,954	17,729,426	+324,472

Transferred to other appropriations (as shown in Budget schedules)	+ 67,055	- -	- -	- -
Prior year's appropriation available in 1943	457,091	- -	- -	- -
Anticipated deficiency for overtime pay	- -	2,417,007	- -	- -
Total estimate or appropriation ..	13,637,485	14,987,947	17,729,426	

INCREASES

The net increase of $324,472 in this item for 1945 consists of:

(1) An increase of $348,472 (including $58,472 for overtime pay) under Project 5 "Timber and forest products sales, etc.", to handle an increasing volume of timber sale business on the national forests.

Objective: To handle the increasing demand for sale of timber from the national forests, resulting in an even greater increase, on more than a 3 to 1 basis, in Treasury receipts and land received in exchange for timber.

The Problem: There is an acute scarcity of timber products and everything that will add to the supply should be done. The problem may be broken down as follows: (1) Both war needs and depletion of private timber have increased and will continue to increase the demand for national forest stumpage. The trend from private to public stumpage will continue as there are in many cases no other places for the industry affected to obtain needed supplies of timber. This will increase the National Forest timber business in many units that are not being cut to their allowable sustained yield capacity. Provision to handle this increase must be made.

(2) A marked trend to sales of high value timber requires the expenditure of more time and hence more manpower per M cut.

(3) The Forest Service supply of known chances (i.e., areas cruised and blocked out ready for sale) is rapidly nearing depletion because of the heavy volume of business, and the diversion of men formerly engaged on timber survey work to sales administration. Timber surveys should be undertaken to establish a supply of loggable areas, and to obtain data on the areas which can be operated with the smallest expenditure of manpower and equipment.

One quarter billion board feet is the minimum increase in cut anticipated for the fiscal year 1945 over the fiscal year 1944. The volume and value of the timber cut from National Forests since 1940 is shown in the following table.

Fiscal Year	Volume of timber cut in Sales and Land Exchanges MBM	Timber Receipts plus value of Land Exchange Dollars	Number of Sales
1940	1,740,271	$ 4,924,924	27,512
1941	2,067,279	6,021,960	25,553
1942	2,204,749	6,629,105	23,889
1943	2,359,463	9,447,130	19,082
1944	2,560,000*	11,500,000*	20,000*
1945	2,810,000*	12,500,000*	22,000*

* Estimated

Continued search for short-cuts in administration has been emphasized. In addition to sales by tree measurement and lump sum where the volume is determined at the time the trees are selected instead of later by scaling each log, the use of sample log scaling is being tried.

Plan of Work: The increased funds requested are needed primarily to handle actual sales administration. However, as a minimum, a program of timber surveys must also be carried on which is approximately equivalent to the area cut over each year.

(2) A decrease of $24,000 due to the elimination in 1945 of a transfer made in 1944 to the Procurement Division, Treasury Department, for expenses of operating the San Francisco, California, warehouse facilities transferred from the Forest Service in 1943 pursuant to provisions of Executive Order 9235. The Forest Service, however, will presumably have to continue paying for the supply service through a surcharge on all supplies and materials furnished and services rendered.

CHANGES IN LANGUAGE

The estimates include proposed additions to the language of this tiem as follows:

investigation and establishment of water rights, including the purchase thereof or, of lands or interest in lands or rights of way for use and protection of water rights necessary or beneficial in connection with the administration and public use of the National Forests;

This change, which proposes the insertion of the language heretofore used under the item "Water rights" has been made to merge the "Water rights" appropriation with the appropriation, "National forest protection and management", as provided in the Budget.

: Provided further, That this appropriation shall be available for acquiring parcels of land needed by the Forest Service to provide winter range for its saddle, pack, and draft animals

This proviso has been added to authorize the Forest Service to acquire lands which are now being rented in Sanders County, Montana, (for winter pasturage of pack animals used in forest fire control) as opportunities for advantageous purchases arise, and savings accrue in this appropriation. It is planned to continue the above authorization until all of the land needed for the winter range has been purchased. The following statement describes the location and area of these winter range lands, and outlines the reasons for their permanent acquisition.

Location - Sanders County, Montana. Headquarters located 3-1/2 miles from the town of Perma, Montana, and 60 miles from the regional office of Missoula, Montana.

Transportation - On the main passenger line of the Northern Pacific Railway. Serviced by local freight three times per week, and daily service by thru auto freight line, one truck each way from Missoula, Montana, and Spokane, Washington.

Area - The total number of acres now under lease is 41,066.53.

Rental Rate - The annual rental paid on the entire area is $12,974.01, or an average rate of .3159 per acre. Maximum 50¢ per acre; low 3.5¢ per acre for State lands.

The Winder Range area is divided into four general areas; namely, summer, fall, winter and spring ranges. A record of actual use is kept on all areas, and is being used by Range Management in working up a comprehensive grazing management plan for the entire area.

Estimated Cost - $273,000.

General information pertaining to acquiring the Winter Range is covered in attached memorandum under the following headings:

I Reasons for Acquiring Winter Range
II Costs of Grazing - Present Plan Against Former Method
III General Requirements of Pasture Needed

Reasons for Acquiring Winter Range: Region One of the United States Forest Service embraces an area approximating 27,500,000 acres of rough terrain and includes the highest mountain ranges of the northwest. A trail system of 38,426 miles represents the transportation and travel routes to the remote territory within the national forests. The common carrier over Forest Service trails is the pack mule and this animal is indispensable in the transportation of supplies and equipment that are vital to the successful administration and protection of the national forests.

In the early days of the Forest Service, pack stock was obtained by rental from various sources located in close proximity to the forests. The advance of land development, however, resulted in depleting the herds of range horses at a rapid rate. In the early twenties it became obvious that Region One could not rely on rented stock to fill pack train needs, because suitable animals had become too scarce. As a consequence, the region embarked on a program of purchasing pack and saddle stock in order to insure an adequate supply. In 1931 it became apparent that the number of pack stock available

for purchase or rental was inadequate to meet the transportation demands of the region. The dwindling supply of pack and saddle stock on the open market prompted initiation of the Remount Depot, now operated for the purpose of producing pack and saddle animals to meet the requirements of Region One and adjacent regions.

Approximately 1800 head of pack, saddle, and brood animals are maintained in the region. Three hundred pack and saddle animals, included in this total number of stock, are located at distant points from the central range. Because of excessive transportation costs, these animals are wintered at locations adjacent to the forests involved.

The work period for pack and saddle stock extends from about May 1 to October 15 of each year. During the remainder of the year, stock must be furnished feed. The most economical method for maintaining pack and saddle stock, during the pre and post field season, is accomplished by placing the animals on range that supports an adequate supply of feed in the way of native grass. The high costs of hay, grain and handling charges are thus eliminated.

Because of changing ownership, demand for sheep range and expansion of the stock business, permanency of the Forest Service range is threatened. The loss of the leased range lands would constitute a costly and severe handicap to the administration and protection of the national forests in Region One. The importance and economic factors of the Remount project support the opinion that permanency of the plant should be insured through the process of acquisition by the Federal Government.

Costs of Grazing - Present Plan Against Former Method: The present leased area totals 41,066.53 acres and is owned by 35 separate lessors. The annual rental paid for the area is $12,974.01 or an average rate of .3159 per acre. The range land is of high quality and is the only suitable area that is strategically located within the region.

The average cost per animal month, figured on the over-all cost of operating the Winter Range, is $1.80. This cost not only covers the grazing fees but includes the cost of all overhead required for the supervision and handling of all the animals wintered, and other items such as veterinary supplies, telephone toll charges, fuel, shoeing supplies, subsistence, transportation, etc.

If for any reason the present area should no longer be available, it would be necessary to fall back on the scheme that was followed prior to creation of the Winter Range plan. That plan would work something like this: Abandon Remount project and stock breeding plans. Each forest would have to locate a pasture on or adjacent to the national forest to winter its stock. The rate would be from $2 to $3 per head per animal month for pasture only, on pasture lands that would be available, and such lands are those that have already been pastured to some extent. In addition, in order to bring the stock through the winter in fairly good shape, it would be necessary to feed up to two tons of hay per animal, costing from $8 to $15 per ton in normal times to $22.50 per ton, the present value. When this system was tried before, pasture lands as above described were not always available and it was necessary to rent overgrazed

areas and purchase hay in quantities sufficient to carry the stock through. The costs of supervision and hand feeding ran the wintering costs up to exorbitant figures. The above statements are based on conditions that existed up to 1935. Other elements involved are: Without the present setup, the region would not have the facilities for handling its stock, such as breaking young mules, maintaining the brood mare herd for the purpose of insuring an adequate number of mules for this region and part of the annual replacements for Regions Four and Six, amounting to 120 head annually.

Figuring that the average work period for forest-owned mules and saddle horses is five months and that the forage must be provided for the other seven months, the following comparison of costs is available, based on present conditions and prices:

7 months $2.50 per animal month	$17.50
Up to two tons of hay delivered at $15.00 per ton	30.00
Total for feed and forage only	$47.50
Present costs at Winter Range - 7 months $1.80	12.60
Excess cost per head over Winter Range	$34.90

General Requirements of Pasture Needed: In the selection of a suitable pasture area to meet the needs of the Region, the following factors must each be given consideration:

Location: Nearness to principal points of use for pack and saddle animals to keep transportation costs down and reduce to a minimum the time elements in moving stock from summer job to winter pasture, and vice versa, is an important consideration.

Character of Range: To select an area supporting nutritious winter forage, free of loco weed and other plant species poisonous to horses and mules, possessing natural shelter for grazing animals in a region reasonably free of deep snow and prolonged periods of low temperatures, containing dependable water supplies distributed in a pattern permitting yearlong use of all the range, if necessary.

Other Limitations Affecting Selection: Size of pasture needed (approximately 40,000 acres), nearness to supplies of hay, grain and other stored feeds in case of need in the exceptionally severe winter. Accessibility to good roads, rail transportation, telephonecommunication, and the need of local users for pasturage are all elements affecting selection of any given tract.

These factors were all given studied consideration in the selection of the area now under lease. In fact, no other area as admirably adapted to the needs of the region is within striking distance. Prior to selecting this area for lease purposes, a comprehensive search and range survey was made of this general territory and disclosed that the present area possesses the greatest number of advantages for the purposes intended. A general description of the area now under lease will be helpful in understanding its advantages as a range to be used for wintering pack and saddle animals, and to provide summer pasturage for the breeding herd, young stock, and other animals kept there.

Location: Portions of the area now used project into Townships 18, 19, 20, 21 N., Ranges 22 and 23 W, M.P.M. Nearby postoffices are Perma, Camas Prarie, Hot Springs, Lonepine and Dixon, Montana. Missoula, Montana, regional headquarters of Region One of the Forest Service, is approximately 50 miles southeast from the nearest part of the tract. The southern boundary of the range follows the Flathead River for a distance of approximately seven miles between the towns of Dixon and Perma, Montana. From the center of its southern boundary the range extends northward approximately 18 miles as the crow flies.

Portions of all but five of the eighteen forests in the Region are within a 100-mile radius of the range headquarters. All of the forests using the largest number of pack and saddle stock are within this radius. Units beyond the 100-mile radius will make arrangements nearer home for feeding and pasturage during the "off" season. A substantial saving in time and expense is brought about through this strategic central location, as it permits driving the stock overland to and from the range to points of use. Where trucks are used for the transportation of stock, the hauling distances are the shortest possible. These advantages are important in the selection of the pasturage area.

Elevation and Topography: Elevations of the tract range from approximately 2500 feet above sea level along the Flathead River to 3500 feet on the highest points of the range. The general topography of the area is hilly, with some very steep slopes. Deep cut coulees, with numerous small shallower branches, break the tract up into natural units of use. Much of the range slopes to the south and southwest, affording maximum sunshine which, in turn, means warmth on cold winter days. Snow usually does not remain long on these warm slopes.

The general character of the topography favors winter pasturage of livestock. It is rough enough to afford natural shelter during stormy periods, and possesses a sufficient number of ridges exposed to prevailing winds to provide barren areas from which the snow is swept away a large part of the winter.

Climate: Weather records covering an 18-year period to date are available from the station at Lonepine, which is located but a few miles north from the range. These records reveal average January temperatures of 23.2° F. The mountain ranges that surround this area afford some protection from cold waves and give rise to the occurence of the well-known chinook wind.

The average frost-free period at Lonepine is 120 days. This period is believed to be longer at Perma, and along the Flathead River that forms the southern border of this range.

Average annual precipitation at Lonepine is but 10.10 inches. Winter precipitation from December 1 through March 31 averages 3.43 inches. In comparison, Missoula's average is 3.83 inches, Kalispell 4.55 inches, and Libby 7.61 inches. These figures mean that snow depths average less in the vicinity of the Winter Range than elsewhere in this general territory, and is a decided advantage to animals on winter pasture.

June is the wettest month on the average at Lonepine, which promotes the growth of range forage when moisutre is most needed.

Study of these records leads to the conclusion that the climate in the vicinity of this range is better than surrounding points for the purpose of grazing livestock on pasturage in winter. This conclusion is also supported by the fact that the area was used for a long period of time for winter pasturage purposes previous to the Forest Service obtaining lease of it.

Character of Forage: A wide variety of vegetation is present in the pastures now under use. Most valuable and abundant are bluebunch wheatgrass (Agropyron spicatum), Buffalo bunchgrass (Festuca scabrella), Idaho fescue (Festuca idahoensis), and Sandberg bluegrass (poa secunda). Junegrass (Koeleria cristata). and representatives of the rye, brome, needlegrass and many others of the common range grasses are present in more limited abundance. Cheatgrass (Bromus tectorum) invaded most of the pastures under private use prior to leasing by the Forest Service.

Plants poisonous to horses and mules, such as loco weed, are not known to be present. This range is poison free, insofar as experience and observation to date is concerned.

Grazing Capacity: Range surveys made in 1932 disclose that cheatgrass occupied much of the area at that time. Due to prolonged heavy use by sheep and other livestock, coupled with a series of dry years, density and vigor of the vegetation was generally poor. One pasture of 1335 acres that had a grazing capacity of 155 horse months, now has a capacity of 340 horse months. Another pasture has increased in grazing capacity from 340 to 573 horse months. In 1932 grazing capacity was at the rate of approximately 4 acres per animal month. This has since increased so that 2.7 acres per animal month is sufficient to provide the forage needed without damage to the range. With improved management plans, and the stability that comes from ownership, further increases in grazing capacity can be anticipated.

As it now stands, from 2-1/2 to 3 acres per animal month ought to be allowed upon the area selected for winter use. A smaller allowance can be satisfactorily used on pastures intended to be grazed during the summer months.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$ 196,835	$ 45,100	$ 45,100
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	861,039	2,417,007	2,475,479
Total cost of overtime (7 months in 1943).	1,057,874	2,462,107	2,520,579

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

General: This appropriation covers all activities relating to the administration, protection and development of the national forests except the special appropriation for roads, trails, white pine blister rust, acquisition, and emergency fire suppression.

Objective: To manage, protect and develop the national forests and to utilize their timber, water, range, recreation, wildlife and other resources in such manner as will render the greatest possible service to the Nation as a whole.

Problem: Within the national forest boundaries is an area of 228 million acres, of which 178,508,000 acres are in Government ownership. Geographically this area reaches into 40 states, Alaska, and Puerto Rico. Many tracts of privately owned lands are interspersed within the Federal holdings.

The protection and management of so vast an area presents difficulties and complexities not commonly found in many other governmental undertakings. National forests are managed under the multiple use principle. This means that practically all areas are used for, or serve, more than one purpose or objective. For example, 50 percent of the area within the national forests of the continental United States serves five different purposes, viz., timber production, watershed protection, forage production, wildlife production and recreation. An additional 28 percent serves four different purposes in varying combinations. An additional 21 percent serves three purposes. This leaves only 1 percent of the total which is reserved for one purpose exclusively, mainly, special use areas such as summer home sites, pastures, corrals, etc.

The above paragraph clearly demonstrates the necessity of careful planning in the management of the national forests, and brings into focus the interests which continually conflict and which must be reconciled by the managers of the national forest properties.

The protection of national forests from fire, insects, disease and trespass is made difficult by the large area to be protected, the general inaccessibility of the national forests, the many thousands of miles of exterior boundary, and the impossibility of taking preventive action when dealing with such a problem as lightning-caused fires (4,521 in the calendar year 1942).

Significance: The following is indicative of the economic importance of the national forests:

(a) The area within the national forest boundaries is equivalent to some 10 percent of the area of the continental United States.

(b) Sales and permits were granted in the fiscal year 1943 for the cutting of more than 3,700,000,000 feet of timber from the national forests. These contracts cover periods ranging from a few weeks to ten years.

(c) They produced a cash income to the Federal treasury in excess of 10 million dollars in 1943 from the sale of timber products, grazing, and land rentals.

(d) They provide range for over 12 million head of domestic livestock.

(e) Nearly 4,000,000 people who live in and near the national forests are supported in whole or in part through the management and utilization of them and their resources.

(f) They provide watershed protection of municipal water supplies for cities and towns with a total population of approximately 6,000,000 as well as water supplies which are immensely valuable to agricultural interests.

(g) They provide a habitat for a large part of the big game animals of the country, and for millions of small game animals, birds, and fur-bearers.

(h) They provide a measure of assurance of a future timber supply. In 1943 only 2,359,000,000 feet out of an estimated allowable annual cut of 6,500,000,000 feet were removed from the national forests.

(i) They provided areas of land in large blocks already in Government ownership which are now being used for military purposes. Witness the transfer to the War Department of the Choctawhatchee National Forest, Florida, and the exclusive use by that Department of large areas of national forest land in Mississippi, Missouri, Colorado, Louisiana, South Carolina, and California. In addition, many national forests have been used for maneuvers and for special military training projects. In excess of 2,000,000 acres of land have been turned over to military agencies by Act of Congress, executive or public land order, or by special use permit since the war began. The availability of these lands has saved the military agencies at least $10,000,000 in acquisition and rental costs.

Plan of Work: To facilitate administration, the national forest area is divided into 10 regions, 146 national forest administrative units, with 761 ranger districts averaging approximately 300,000 acres in size, or 7-1/2 times the area of the District of Columbia. The personnel of the basic organization, which is charged with the field administration and general operation of these geographical units, is also responsible for the protection of the national forests from fire, insect and tree-disease epidemics, and trespass, and for the integration of their management with economic and social problems of both national and local scope, in order that the natural resources of the national forests will contribute as

fully as possible to the solution of such major problems as the production of needed timber and other forest products, utilization of forage without injury to the vegetative cover, flood control in major and minor watersheds, demands for outdoor recreation by millions of people, the permanency and continued prosperity of dependent communities, war activities, etc. The members of this basic organization manage all activities on their respective geographical units.

This basic organization is supplemented by fire guards and lookouts during the fire season; by temporary laborers on insect control, planting, maintenance, construction, and survey projects; by cruisers, scalers, and lumbermen engaged in timber activities; and by the year-long technicians which are necessary for the proper handling of functional activities such as fire control, timber sales, range management, reforestation, etc.

Progress and Current Programs:

General management, operation and regulation of national forest properties, including enforcement of Federal laws and regulations applicable to the national forests: This project was established for the primary purpose of showing the cost of the basic (skeleton) forest and ranger district organization, the members of which are directly responsible for all programs on their respective units. This means that they must constantly adjust their programs of work to meet economic conditions which bring about a very strong demand for national forest timber and other forest resources; emergencies such as forest fires and insect epidemics, war activities, shifts in population; etc. These men are both "doers" and supervisors. They spend their time, in constantly varying percentages, over all of the activities under this appropriation heading. In addition, they supervise the work carried on under other appropriations, such as Forest Roads and Trails, Fighting Forest Fires, White Pine Blister Rust Control, Cooperative Work, and working funds.

Maintenance of improvements other than roads and trails: The complete elimination of the Civilian Conservation Corps on June 30, 1942, precipitated a critical situation in this project. CCC enrollees had been relied upon to a large extent to maintain many of the improvements on the national forests. While maintenance work may be postponed on some classes of improvements, other improvements must be maintained annually if they are to serve their purposes at all. Improvements in this category are telephone lines, lookout towers, guard cabins, range and administrative fences, water development projects, etc., all of which are of vital importance to the fire control and range management activities.

To provide even rudimentary maintenance to these high priority projects in the fiscal year 1943, it was necessary to reallocate funds from other projects, mainly Projects Nos. 7, 8, 9, 10, and 11.

During the fiscal year 1943 the appropriation contributed to the maintenance of the following national forest improvements:

61,433 miles	Telephone lines
5,108 "	Firebreaks
2,944	Lookout Houses, Towers, and Observatories
63	Airplane Landing Fields
530	Pumpsets
1,038	Dwellings, Headquarters
732	Offices
2,283	Dwellings, Temporary Stations
2,378	Barns, Garages, and Warehouses
1,141 miles	Fences, Headquarters
2,854 "	Fences, Temporary Station, and Plantation
1,191	Water Development Projects, Headquarters
928	Water Development Projects, Temporary Stations
103	Gas and Oil Storage Buildings
2,263	Sanitary Systems (Includes latrines)
208	Light, Power, and Central Heating Plants
676	Bunkhouses, Barracks, etc.
3,098	Other Improvements, Headquarters
4,087	Other Improvements, Temporary Stations
22,904 miles	Range Fences and Corrals
6,164 "	Stock Driveways, Range
13,282	Water Development Projects, Range
3,629	Campgrounds
5,469	Campground Buildings
1,154	Water Systems, Campgrounds
261	Dams, All Types
580	Special Use Area Facilities
5,370	Other Improvements, Miscellaneous

Forest fire control, including prevention of fires and maintenance of detection and "smokechaser" organization. More than one-fourth of the remaining sawtimber of the country is located in the national forests. Within these areas are also located important watersheds, transmission lines, aqueducts, other lines of communication, and many other values which must be protected against forest fires.

Sawtimber, pulpwood, naval stores, forage, and many other miscellaneous woods products constitute an important group of materials essential to the presecution of the war. These materials will be no less essential to the prosecution of the peace plans. Postwar reconstruction will require vast supplies of the products of our forests. There will be a heavy and continuing demand upon American forests for these products.

Harvesting forest products is a major industry in over half the States. Processing these products is big business in many others. There are few, if any, industries anywhere in the United States which do not require large amounts of lumber, containers, naval stores, paper, crossties, and miscellaneous small woods products. Large industries depend for operating power on electrical energy supplied from water from forest lands. Millions of animals depend on forest lands for forage.

Forest fires can and do seriously impair all forest resources. Forest fire prevention and control is as essential as the industries which use the raw materials which the forests supply.

The control of forest fires is important in peace times, but is even more important in time of war. The flow of raw materials must not be interrupted. It is highly undesirable to divert manpower to prevent and suppress fires, and the use of critical supplies and materials must be held to the absolute minimum needed to do the fire control job.

All of the problems of fire control are intensified in time of war; manpower is scarce, especially experienced manpower; obsolescence of tools and machines presents unusual difficulties. Transportation facilities are limited, and supplies are difficult to get. The record for 1943 (and all "war" years) must be viewed in the light of the foregoing facts.

The season of 1943 began favorably as early rains delayed the opening of the dangerous fire season over much of the country. However, a period of deficient rainfall began in midsummer and extended to as late as December 1 in some parts of the country. The countrywide fire season, therefore, may be characterized as "average bad."

Forest fire control is an activity in which success is represented by the smallest number of man-caused fires, lowest damage as indicated by acreages burned, and lowest fire fighting costs. Weather conditions, including lightning, may entirely change one year's fire suppression results from those of the previous year. The results of any one year must be judged against the average results for a number of years. Some indication of the 1943 fire record on the national forests may be obtained from the following table:

Year	Total Fires	Lightning	Man-caused	Area burned inside N. F.
1941	11,953	5,621	6,332	251,187
1942	11,843	4,521	7,322	497,805
1943	11,810	4,592	7,268	316,657
5-yr. average, 1939-1943	13,626	6,169	7,457	341,944

Because of the importance of protecting producing areas, 1943 fire control efforts were intensified on all strategic timber areas and other areas in the vicinity of industries vital to the war.

Fire control managers were forced to rely upon young boys under 17 years of age, women, and older men. The hiring, training, placement, and supervision of these was a major task. Because of their physical qualifications and inexperience, it was frequently necessary to assign two persons to do the job which formerly was accomplished by one experienced fire guard.

One outstanding accomplishment was the degree to which forest officers succeeded in increasing the cooperation, training and use of local cooperators. Business men not only volunteered for fire suppression work when needed but gave up their summer vacations in order to work in the forests. Other cooperators were organized under the Forest Fire Fighters Service of the Office of Civilian Defense and proved invaluable. The cooperation received from the armed forces--Army, Navy, Marine Corps and Coast Guard--was a large factor in holding down acreage burned. Requests for manpower for fire fighting were promptly met and approximately 56,000 man-days fire suppression time was contributed by the armed forces.

With only a few experienced leaders available it was necessary for fire control managers to plan for the utmost mobility of forces. Airplanes were used for the transportation of supplies, equipment, supervision of personnel and fire fighters to a greater degree than formerly with gratifying results. The fire fighting parachute squad was increased to 60 trained parachuters. These men made 123 individual jumps to forest fires, and it has been conservatively estimated the savings due to their prompt suppression of fires in inaccessible locations aggregated approximately $90,000.

With the exception of southern California, there were no large losses or disastrous fires. That area experienced an unusual period of bad fire weather late in the summer and fall, and almost one-half of the total fire suppression money expended in the United States was spent in controlling fires in that area.

Notwithstanding all the difficulties, it will be noted that the number of fires and the total acreage burned is less than the 5-year average.

Control of tree-destroying insects and rodents on the National Forests: Bark beetles were the principal tree pests requiring control work during the fiscal year 1943 with the major project located in the Wasatch Mountains in Northeastern Utah. The most serious outbreaks on the National Forests were located here and control measures were carried out on the recommendation of the Bureau of Entomology and Plant Quarantine. Progress has been made in controlling this center of

infestation, but the size of the area made it impossible to completely cover all the infested units. In addition to direct control operations, a close check on known endemic attacks as well as searches for possible new outbreaks of an epidemic nature were made in cooperation with the Bureau of Entomology and Plant Quarantine.

Scarcity of labor was overcome by using pre-draft-age high school students, and farmers during their slack periods. Control treatment was conducted on 62,344 acres in the fiscal year 1943.

The penetrating chemical spray method was again used with good results. Until the war is over the use of this method may be limited, as some of the ingredients are classified as scarce and strategic materials. The past year's work using chemicals was possible as some supplies were on hand. The tried and proven peeling and burning method can continue to be used to good advantage if additional supplies are not available for the duration of hostilities.

Timber and forest products sales, free and administrative timber use; timber surveys, management plans, and timber stand improvement: The largest volume of timber in the history of the Forest Service, for any one year, was cut during the fiscal year 1943. This record cut of 2,359,463,000 board feet exceeded fiscal year 1942, the next best year, by 155,000,000 board feet. While the cut increased 155,000,000 board feet, the receipts plus value of timber cut in land exchanges increased from $6,629,105 to $9,447,130, or $2,818,025. It should be noted that the cut of timber from the National Forests increased substantially in a year in which the production record of the timber industry as a whole showed a downward trend. War demands continued to be met. The objective of making available National Forest timber resulted in keeping a number of plants producing that otherwise would have been lost to the war effort. While overcutting the sustained yield cut in a few areas was necessary, it was not done where it would jeopardize the future of dependent communities or through a relaxation of silvicultural standards.

During the year special authority under the First War Powers Act was obtained to speed up the sale of timber urgently needed in the war effort. The normal 30 day legally required period of advertisement was reduced to informal solicitation or advertisement for a minimum of one week. Additional authority was also granted to sell timber without competition after one week's publication of a notice of intent to sell, if the action would maintain or increase production of needed war materials. Lumber and other forest products during the year were classified as strategic materials and the special authorizations to speed up the sales procedure and direct the timber into the channels that could make it serve the most urgent and important war needs helped materially in the war effort.

The Alaska Spruce Log Program got under way during the year and 3,000,000 board feet of Sitka spruce of airplane quality was delivered to the Puget Sound region in Davis rafts. This was cut from the Tongass National Forest under regular timber sale procedure by the Alaska Spruce Log Program along with about 4,000,000 feet of lower quality spruce and hemlock sold to three mills in Alaska to meet deficiencies in their log supply for the production of ordinary lumber for use by the armed forces in the Territory. This spruce logging program is continuing at an accelerated rate.

Elsewhere throughout the National Forest system the personnel made special efforts to make available high quality special material to meet extremely urgent needs of the Military. White oak suitable for large ship timbers, veneer quality yellow poplar, red gum, yellow birch, Douglas fir, noble fir, western hemlock, etc., needed for aircraft and other vital ordinance and industry needs, hard maple for shoe lasts, truck bodies, etc., and trees for numerous other specialty needs were searched for and made available, while at the same time the national forest organization handled an increased demand for timber used in the manufacture of common lumber and other forest products.

Timber Cut in Sales and Land Exchanges

	Timber Cut--MBM			Timber Receipts and Value of Timber Cut in Land Exchange		
	Sales	Land Exchange	Total	Sales	Land Exchange	Total
1942	1,559,702	645,047	2,204,749	$5,042,905	$1,586,200	$6,629,105
1943	1,864,285	495,178	2,359,463	7,610,143	1,836,987	9,447,130

Allocation and issuance of grazing permits, supervision of range use by domestic livestock, range surveys and range management plans on national forests. The administration of national forest grazing is a continuing project, but it assumes added importance during war times, requiring increased expenditure of time and effort on the part of field men to make sure that national forest ranges are making their maximum contribution to the war program.

Between 20 and 25 percent of the adult livestock in western States graze on the National Forests under permit for a portion of each year. Most of the sheep occupy the ranges during the period when lambs are being grown for market. When it is considered that no permits are required for the young lambs admitted with the parent stock, it is safe to assume that the Forest ranges provide upward of 60 percent of the food required by all lambs marketed from these areas.

Local forest officers work in cooperation with livestock men, with U.S.D.A.War Boards, with livestock marketing and other agencies, to the end that the national-forest ranges may contribute their maximum quota of meat and livestock products consistent with permanent productivity and without placing an added drain on the already overtaxed sources of supplemental feed supplies. Thus, while war conditions demand that the fullest possible use be made of the grazing resource, it is equally important so to manage that use so that the ranges will continue in post-war--as in pre-war--years to make their full contribution to the local economy. Use of the ranges must be balanced with their grazing capacity, and it is the announced wartime policy of the Department to encourage increased production through improvement of the herds and better management practices rather than the grazing of additional numbers. Livestock operators generally are in harmony with the Department's position, and a great deal of progress has already been made in this direction, through more effective distribution of livestock, better seasonal use, and the culling and marketing of nonproductive or inferior animals. Adjustments to wartime conditions and needs have been all the more difficult because of rapid personnel turnover both in the Forest Service and on the ranches.

The size of the Range Management job has increased under war conditions. One of the major contributing factors is the shortage of competent personnel to care for the livestock on the open range, particularly sheepherders. There have also been actual and contemplated changes in ownership of livestock and shifts from sheep to cattle and requests for extended seasons. With a curtailment of the range improvement program of fences and water developments, all these factors combine to increase the demands for time of the field officers in connection with the proper administration of the range resource.

	Calendar year 1941		Calendar year 1942	
	Cattle and Horses	Sheep and Goats	Cattle and Horses	Sheep and Goats
Number of pay permits issued	19,098	5,060	19,041	4,798
Livestock* permitted to graze under pay permit	1,175,749	4,787,369	1,191,218	4,758,038
Livestock* permitted to graze free	112,896	12,939	119,329	9,894

Receipts: Fiscal year 1942 $1,595,126 Fiscal year 1943: $1,973,233

*exclusive of animals under approximately 6 months of age

Protection of wildlife resource, preservation of forest conditions conducive to the propagation of wildlife, reduction in number of game animals in overstocked areas, wildlife surveys and management plans. During the calendar year 1942, it was estimated that the public use of National Forest areas for hunting and fishing amounted to 2,200,000 hunter days and 3,947,000 fishermen days.

Principal accomplishments during 1942 toward objectives have been:

A. Surveys of big game overpopulation areas to determine condition of the range and approximate number of animals. This information was used in preparing proposals for increased hunter harvest on overstocked game ranges and resulted in better control of big game numbers than was obtained in previous years. In Utah, for example, the 1942 deer kill on National Forests was 48,000, of which 21,600 were antlerless (doe) deer.

B. Annual estimate of more important species on National Forests. Examples: 2,000,000 deer, 165,000 elk, 42,000 black bear, 9,600 bighorn sheep.

C. Annual estimate of hunter harvest of big game. Examples: 198,000 deer, 31,000 elk, 5,200 black bear.

D. Checking big game use of browse and other plants for game management purposes since they now use about half as much of national forest forage as do cattle and sheep.

E. Cooperative work with State and Federal agencies and other groups included (a) Management of cooperative wildlife areas, (b) Game law enforcement, (c) Deer hide salvage program, (d) Surveys and reports on civilian ammunition needs, (e) Continuation of essential cooperative game survey and management work other than (a).

Enforcement of sanitary laws, garbage disposal, policing and other requisite measures for safeguarding health and safety of national forest users. The national forests necessarily are subject to an enormous volume of public use for purposes of outdoor recreation because of their extent and diverse natural attractions. To take care of these national forest visitors thereby reducing the burden of administration and protection and the risk to national forest resources from fire and unrestricted use by several million persons annually, approximately 4700 camping and picnicking areas, swimming and winter sports areas, and 55 organization camps have been constructed in the national forests, principally with emergency funds. A total of 11 hotels and resorts constructed generally by or in cooperation with other governmental agencies are now under Forest Service administration.

Until 1942, visits to the national forests for the utilization of the recreational resources steadily increased, the 1941 visits exceeding those of 1940 by nearly 2 million. Due to decreased travel, gasoline shortages, longer work hours, and related circumstances, the 1942 calendar year visits were reduced to 10½ million civilian and 225 thousand armed services personnel. Even with this reduced number of visitors the problems of recreational supervision, campground maintenance and clean-up, sanitation and garbage disposal, could not be met adequately. In earlier years much of this work was

performed by CCC and other emergency personnel. In 1943 it devolved upon the regular forest rangers and guards with such time as could be intermittently contributed by crews maintained for the prevention and suppression of fires. The regular organization being taxed by other war activities and programs was able only partially to meet the requirements in this field. Overtime work has been necessitated in many instances. Visits to some of the major forest recreation areas during fiscal year 1943, however, warrant the observation that any reduction in the present standard of maintenance and upkeep of the national forest recreation areas and facilities would seriously endanger personal health and safety and impair the Government's investment.

Land use management on the national forests, including rental of land; land classification; action on claims entered under the public land laws. Reports covering the use of the national forests under special use permit, claims by private parties to national forest lands, and land classification have been discontinued until the return of normal conditions makes their resumption practicable. For that reason estimated figures are given in the following paragraphs.

At the end of the fiscal year 1943 it is estimated that the Forest Service had in force approximately 45,000 special use permits, covering nearly two million acres of public land and over twenty thousand miles of telephone line, railroads, roads, pipelines, drift fences, etc. In a typical year 6600 new special use permits are issued and a slightly smaller number are terminated. The turn-over in such permits requires administrative action additional to the normal supervision of the uses which is requisite for the protection of government property and safeguarding of the public interest.

In addition to the ordinary special use permits, war agencies were authorized up to December 1, 1943, to use for encampment and training purposes approximately 1,600,000 acres of national forest land, exclusive of maneuver rights granted for the entire area of one forest (664,683 acres) and areas transferred to war agencies by Act of Congress, Executive or Public Land Order (597,769 acres).

Despite reduction, modification, or waiver, under the authority vested in the Secretary of Agriculture, of special use fees to persons in the armed forces and others who were unable to utilize their improvements or realize their maximum use because of war conditions, special use fees for the fiscal year 1943 showed an increase of $5,898.84. Total special use receipts for the fiscal year amounted to $392,709.36 on national forest lands.

During fiscal year 1943 six leases were entered into covering oil and gas resources on national forest lands and land utilization projects under the jurisdiction of the Forest Service. The United States will receive royalties on the production obtained.

Though reports on homestead and mineral claims have been eliminated for the duration of the war, necessary action has been continued in the way of examination and reports on such areas and holding of hearings. Indications are that the homestead claims have fallen off slightly since 1941, the year when the last reports were received, but that mineral claims have increased, possible as a corollary of the war.

Under the Act of August 10, 1912, directing the Secretary to "select, classify, and segregate", lands within the national forests that may be opened to settlement and entry under the provisions of the Forest Homestead Act of June 11, 1906, three national forest areas comprising 24,788 acres were examined during fiscal year 1943, formal reports covering their classification were prepared and received the Secretary's approval. Reexamination of 27 areas resulted in the reclassification of 1753 acres as not chiefly valuable for agriculture and 350 acres formerly classified as not chiefly valuable were found to contain such agricultural values that they were listed for entry in accordance with the provisions of the Forest Homestead Act of June 11, 1906, and the Indian Allotment Act of June 25, 1910.

Within and contiguous to the national forests are almost two hundred thousand rural families. Of these, approximately twenty-five hundred families occupy national forest land, such occupancy in most instances being in effect at the time lands were acquired. The rehabilitation of the lands and structures thus occupied is regarded by the Forest Service as a highly desirable objective. Conditions created by the war have necessitated a cessation of activity in this field, but its resumption at the earliest practicable date is contemplated.

During the fiscal year ending June 30, 1943, the Secretary of Agriculture approved 128 land exchanges in accordance with the provisions of the General Exchange Act of March 20, 1922, and 43 land exchanges under the Act of March 3, 1925, making the total of 171 approved exchanges for the year. As a result of such land exchanges with private individuals, the Government will receive 367,991 acres of land appraised at $2,251,208 in exchange for 67,973 acres of national forest land valued at $227,998 and $1,806,224 worth of national forest stumpage.

Accurate maps are essential for adequate and efficient protection, development, and administration of land and resources. These are generally prepared from aerial pictures which serve not only for map production but a variety of activities such as fire control, range surveys, determination of the distribution and density of timber and many other purposes. Planimetric maps were prepared from pictures for 3,659 square miles. Forty-four maps were published, of which 18 were on 1/4-inch scale, 17 on 1/2-inch scale and 9 on 1-inch scale.

These accomplishments are much less than for the past fiscal year because of participation in the War Mapping Program of the War Department, to which practically all regular surveying and mapping personnel has been transferred.

Protection, development and management of water resources of the national forests. Inventory of erosion problems, curtailed sharply in 1942, was continued on a small scale in several national forest. Work progressed on erosion control projects on several national forests using labor provided by Civilian Public Service camps. On the west coast a co-operative effort with other federal agencies has been instituted to simplify and correlate the collection of precipitation data. Beginning with the fiscal year 1945 the activities formerly financed from the "Water Right" appropriation will be merged with this project.

Construction of improvements other than roads and trails. In the main, construction work on the national forests is in a deferred status for the duration. However, a need occasionally arises for the construction of telephone lines, drift fence, warehouse, shop, or other type of project to facilitate the protection effort, the cutting of timber, or the management of stock on National Forest ranges. Expenditures in the fiscal year 1943 were substantially lower than those of 1942, and were restricted to projects of the highest priority--those which could not be deferred without weakening the protection or resource management effort.

Reforestation of denuded National Forest areas and plantation care. Nurseries and planting. In the calendar year 1942 a marked reduction took place in the number of acres reforested. This period included the last days of the Civilian Conservation Corps and the beginning of Civilian Public Service camps. Labor from both these sources and a small number of local crews made it possible to plant 56,350 acres with 53,506,000 trees. The nurseries were placed on a maintenance basis for the duration with sowing undertaken for only such planting stock that requires two or more years to produce.

The planting of trees on denuded and non-restocking lands is the only means in most cases to make non-producing lands productive. With the nurseries on a maintenance basis it will be possible to expand the program soon after hostilities cease and work projects are needed.

Approximately 2,442,000 acres of the National Forest acreage at present are in need of reforestation.

Forest Plantation Care. The work performed on this activity in the fiscal year 1943 was financed from the special appropriation of $500,000 carried in the Sixth Supplemental National Defense Appropriation Act, approved April 28, 1942. Good progress was made in

treating the more seriously jeopardized forest plantations, especially in the Lake States. Work consisted of removing so-called weed tree species and brush from competing with and smothering planted trees in plantations that had been established for a number of years. Competition by the faster growing brush and weed trees was slowly but surely crowding the planted trees out of the picture. The removal of the undesirable growth releases the planted trees, making it possible for them to renew their vigor and assert themselves before competition again becomes serious, except in a small percentage of the plantations where additional treatments are necessary.

Out of 255,000 acres of forest plantations in need of release at the beginning of fiscal year 1943 approximately 80,000 acres were treated.

Work on this project in the fiscal years 1944 and 1945 will be confined to the comparatively small amount of work which can be performed by the personnel of the Civilian Public Service camps.

(b-1) Water Rights

Appropriation Act, 1944	$9,410
Budget estimate, 1945	- -

Note: The budget estimates propose the consolidation of funds heretofore appropriated under this item with the item "National forest protection and management."

(c) Fighting Forest Fires

Appropriation Act, 1944	$100,000
Budget estimate, 1945	100,000

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Fire suppression	$1,594,736	$67,000	$67,000	- -
2. Protection of unappropriated public forest lands	125,055	33,000	33,000	- -
Unobligated balance	99,509	- -	- -	- -
Total estimate or appropriation	$1,819,300	100,000	100,000	- -

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$22,195	- -	- -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	- -
Total cost of overtime (7 months in 1943)	22,195	- -	- -

WORK UNDER THIS APPROPRIATION

Because of the impossibility of predicting in advance what expenditures will be necessary in suppressing forest fires, Congress has for 30 years followed the practice of appropriating only a nominal sum in the annual appropriation act. Supplemental estimates are submitted after the close of the summer fire season for expenditures actually incurred in excess of the regular appropriation, plus an estimated amount for the period remaining in the fiscal year.

Fire suppression: This project covers emergency fire control expenditures on the national forests. Administrative restrictions placed upon the use of these funds by the Forest Service provide that expenditures shall not be made therefrom until forest fires have actually started. An exception is made to this rule, however, when fire conditions become so critical that the regular protective organization, which is financed from the appropriation "National forest protection and management," is unable to cope with the situation and when, therefore, the temporary employment of additional guards clearly will reduce expenditures for fire fighting.

Protection of unappropriated forest lands: Unappropriated public forest lands are widely scattered throughout the entire West. In many cases protective associations, organized to protect privately owned lands, and certain states were compelled, prior to fiscal year 1938, to protect the public forest lands intermingled with the private lands. Under cooperative arrangements which have been worked out between the Forest Service and the timber protective associations and states, the Federal Government now bears its fair share of the cost of protecting these public lands. The accounts of these cooperatives are audited by the Forest Service and the per acre cost of protecting the public forest land is based upon the total cost of protecting all of the lands within the boundaries of the protection unit.

FOREST RESEARCH FUNDS

General Statement:

At the beginning of the fiscal year 1944, major shifts in emphasis of the Forest Research program had already been made to meet war requirements and essential civilian needs. The situation with regard to forest products has become increasingly acute, and right now there is a tremendous demand for wood in its various forms, and for information on selection, rapid production, specifications, faster service, and more efficient utilization. Such requirements include lumber and structural timbers for general wartime construction; lumber for crating, packaging, and containers, for shipping war material, food, and other lend-lease supplies; for pulpwood, veneer, plywood, naval stores, wood distillation products, cooperage, poles, piling, and fuelwood; and for specialty products such as for trainer, fighter, transport, and glider aircraft, ship timbers, gun stocks, handles, shuttles, and other products. These demands must be met to the fullest extent possible and in accordance with the best technical specifications. At the same time, factual information on sound forestry practices must be made available in order to safeguard the basic resource against wasteful, destructive, and excessive utilization or exploitation.

Forestry in general and forest research in particular are recognized as requiring public support and leadership. Roughly one-third of all forest land is in public ownership. The remainder is very largely distributed among small owners dependent upon public agencies, chiefly the Federal Government through the Forest Service to do research.

The Research organization of the Forest Service has accumulated during many years of work a mass of highly technical information that has been very useful in the war program. With personnel skilled in many fields, and familiar with forest products and range livestock production problems throughout the country, it has now developed a program well adapted to rendering necessary services, advice, and guidance in numerous ways to numerous agencies, and to undertaking projects specifically needed to meet war problems as well as to carry forward vital phases of going research.

(d) Forest Management

Appropriation Act, 1944	$400,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+53,848
Total anticipated available, 1944	453,848
Budget estimate, 1945	453,848

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Silvicultural investigations	$243,877	$217,170	$217,170	- -
2. Forest regeneration investigations	85,249	86,080	86,080	- -
3. Fire protection investigations	94,608	72,955	72,955	- -
4. Naval stores investigations	35,329	37,935	37,935	- -
5. Forest genetics investigations	52,520	39,708	39,708	- -
6. Mensuration investigations	40,544	- -	- -	- -
Covered into Treasury in accordance with Public Law 674	1,829	- -	- -	- -
Unobligated balance	6,627	- -	- -	- -
Total available	560,583	453,848	453,848	- -
Transferred to "Salaries and expenses, library"	+12,671	- -	- -	
Anticipated deficiency for overtime pay	- -	-53,848	- -	
Total estimate or appropriation	573,254	400,000	453,848	

Statement of Overtime Costs

	1943	Est.1944	Est.1945
Overtime absorbed	*$17,781	$ 200	$ 200
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	16,754	53,848	53,848
Total cost of overtime (7 months in 1943)	34,535	54,048	54,048

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To supply the facts on which to base sound forest practices, specifically the information needed by Federal, State and private agencies, on how to reforest, protect from fire, improve and manage forest lands for efficient and permanent production of forest products, and to maintain forest cover where needed for recreation, wildlife and watershed protection.

The Problem and Its Significance: There are 630 million acres of forest lands in the United States, of which 462 million are capable of producing commercial timber crops. There are over 50 important forest types and 180 commercial tree species to be dealt with.

Much of the lack of progress in improving forest cutting practices, in protecting forests from fire and in obtaining more satisfactory natural regeneration of harvested areas can be attributed to inadequate technical information on how to protect and harvest the trees in the various forest types. Research and experience have shown that these individual forest types require quite different stand management procedures for satisfactory yields and maintenance of a desirable forest cover.

General Plan: Research under this appropriation is conducted at 12 regional forest experiment stations. Much of it is conducted on experimental forests in representative forest types and consists of basic laboratory work and of sample plot or small-scale management experiments. Continuity in the work schedules and records which by their nature are long time is essential to the maintenance of these studies.

Progress and Current Program: The current program includes the maintenance of existing field experiments on a minimum basis and research on problems emphasized by the war. Examples of the current program and of recent accomplishments are:

Silviculture investigations: While much of the effort under this project has currently gone into maintaining harvest cutting experiments and keeping examinations of sample plots up-to-date, definite progress was made in assembling information for application in the silvicultural field, such as --

(a) A study of the growing of jack pine in the Lake States was completed showing forest owners and operators how to harvest this type and yet provide for adequate regeneration to keep the land fully productive.

(b) A comprehensive monograph was completed on longleaf pine of the South. This study dealt with one of the most important southern pines, which has been losing ground because of lack of knowledge as to how to maintain it in the stand in the face of aggressive competition for growing space from associated species.

(c) Analyses were completed and recommendations formulated which sum up what has been learned about regeneration of Douglas-fir, the most important species in the Northwest. Both this and the longleaf study are of such interest to private owners that the Pack Foundation is undertaking the cost of publication of the findings.

Forest regeneration investigations: Special attention is being given to field planting tests in cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering, of the various rubber-yielding plants. The experience of personnel on this activity in conducting forest tree seed studies and planting experiments has been freely brought to bear on these new problems. Progress was made in assembling information derived from planting and seeding experiments in the central Appalachian and other regions in preparation for post-war forest planting programs. Incident to the work, techniques developed in forest planting were drawn upon and adapted for the testing, storing and handling of seed of rubber-yielding plants in the rubber production program.

Fire protection investigations: Research was continued to aid fire control organizations to meet an increasingly critical fire situation in key defense areas. Assistance was given in organizing for fire control in new areas on an intensified scale; in the preparation of special fire control plans for forest areas around important military and industrial establishments; in the adaptation of fire danger meters (used as guides to fire control planning and suppression activities) to cover additional forest types, together with locating, installing, and servicing the fire danger measurement stations needed for their operation; in the completion of standards for fuel type maps; and the improvements in fire dispatching including the preparation of meters to aid in determining the number of men to dispatch.

Numerous spot studies were made relating to fire problems accentuated by the war, for instance, how to fireproof roadsides, railroads, and power lines; how the use of incendiary materials will modify detection and suppression requirements, and how tank trucks and more effective application of water and chemicals to forest fires can be used to offset the effects of reduced manpower in initial attack.

The urgent problem of use of controlled burning to reduce the fire hazard in forests of the Southeast has demanded considerable study. Losses from fire in these forests were extremely heavy last year, due to unfavorable weather and serious shortages of manpower for fire protection. A study was completed on the effect of fire on naval stores yields and the probable advantages of using fire to reduce the volume of undergrowth fuel. Current studies are now directed to the techniques of controlled burning, involving: When and under what conditions to burn, and how to organize and conduct the protective burning.

Naval stores investigations: War demands for turpentine and rosin have not been met by current production and stock piles of these materials, particularly rosin, are currently at a very low level. Labor shortages in particular have made it impossible to meet war goals for current production. Methods of chemical treatments are currently being studied on a limited scale to give higher yields per tree, with little increase in labor. Results so far obtained from these experiments are extremely promising. Last year several operators in a test of the methods under commercial operating conditions averaged an increase of 25 percent yield of naval stores over the ordinary method of working trees. Some of the small-scale tests under careful experimental control are showing increases in yield up to 125 percent. Under the current program this work is being pushed as hard as available resources permit.

Forest genetics investigations: Investigations under forest genetics have been limited to maintaining the long-time breeding experiments to safeguard previous investments in the studies and to problems concerning the serious shortage of cork. Previous to the war, most of the cork used in this country came from Spain. The possibilities of obtaining suitable cork from trees grown in the United States are being explored, and problems of obtaining seed from desirable strains of Spanish-grown cork oaks for planting in this country are being investigated. The latter activity is carried on in cooperation with one of the large cork companies.

Mensuration investigations: A short-cut method of measuring logs necessitating the employment of fewer scalers but without loss of accuracy was developed and is widely applicable in logging operations. Work under this activity was discontinued beginning with the current fiscal year.

(e) Range Investigations

Appropriation Act, 1944	$250,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+38,475
Total anticipated available, 1944	288,475
Budget estimate, 1945	288,475

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Grazing management investigations	$193,251	$216,220	$216,220	- -
2. Artificial revegetation investigations	46,299	53,305	53,305	- -
3. Range forage investigations	16,865	18,950	18,950	- -
Covered into Treasury in accordance with Public Law 674	800	- -	- -	- -
Unobligated balance	8,050	- -	- -	- -
Total available	265,265	288,475	288,475	- -
Anticipated deficiency for overtime pay	- -	-38,475	- -	
Total estimate or appropriation	265,265	250,000	288,475	

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$ 7,923	$ 200	$ 200
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	9,765	38,475	38,475
Total cost of overtime (7 months in 1943)	17,688	38,675	38,675

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To develop better grazing practices and ways and means of improving forage production on the range lands of the Nation in order to facilitate sustained maximum production of range forage and livestock and increase returns to livestock producers.

Problem and Its Significance: The native forage produced on the 900 million acres of public and private range lands in the West, South, and Southeast is a major factor in production of the Nation's cattle and sheep.

This 3 billion dollar livestock industry is furnishing the meat, hides, wool, and other critical livestock products required by war. The western and southern range territories produce 80 percent of the Nation's wool and mohair, three-fourths of the live weight of sheep and lambs, and more than half of the live weight of cattle and calves. Better grazing management and revegetation, assuring sustained high forage yields, are the keys to maximum and more profitable livestock production.

General Plan: The work consists primarily of field and laboratory experiments in cooperation with the State ageicultural experiment stations, Federal agencies, farmers, and other similar groups, and of furnishing information and assistance to various agencies of the Departments of Agriculture and Interior and the War Food Administration in their production programs. In order to be of maximum service, range research has streamlined its program and by reducing its longtime records to the minimum needed to maintain essential continuity has freed personnel and funds for other urgent wartime work.

Examples of Progress and Current Program: The following examples of recent accomplishments under this appropriation indicate progress on several important aspects and the shift to support the war effort.

Grazing management investigations: This project is developing practices that maintain and improve the range forage resource and in turn increase calf and lamb crops and production of meat and wool per animal.

Direct wartime activities include:

(a) Supplying information in formulating the 1942, 1943, and 1944 national and state war-production and marketing goals for forage, livestock, wool, hides, shearlings, and other critical products obtained from range lands.

(b) Aiding State Agricultural War Boards in action to attain these goals.

(c) Inception and guidance of Departmental program for earlier marketing of range cattle.

Other accomplishments include:

(a) Concluding additional phases of research. These include preparation of guides to help stockmen appraise and interpret range conditions and to recognize efficient utilization, and thus realize maximum sustained livestock production. Such guides have been prepared for annual-type ranges of California, semi-desert ranges of the Southwest, and shortgrass ranges of the Great Plains. Specifications for safe and effective burning of sagebrush on western range lands were developed. Carefully prescribed burning of dense sagebrush stands supporting grasses improves the growth of desirable forage plants and reduces sagebrush so that it does not interfere with grazing. Grazing capacity is increased more than half again, herding is simplified, wool losses are minimized, and other advantages are realized.

(b) The cooperative studies of forest grazing by cattle in the Coastal Plain of Georgia and North Carolina have brought a better understanding of the forage values of most of the important native grasses and of other range plants, identification and recognition of the seriouness of poisonous plants, and the value of cottonseed meal as a supplement to native forage. The experiments show, for example, that range cows can be grazed on the native wire grass forage in south Georgia during most of the winter without loss in weight and without death losses from starvation if they are supplemented with a small amount of cottonseed meal. With the supplement, the native forage is grazed more readily. Although the experiments have not been carried far enough to make definite statements, the savings effected in reducing death losses (which often run as high as 30 percent in native herds) more than offset the costs involved. Those cows fed at the rate of 2 pounds of cottonseed meal per head per day from October 15 to January 22 gained an average of 22 pounds and came through the winter in good condition in contrast to an average loss of 81 pounds in unsupplemented cows. The experimental herd produced a 91 percent calf crop in 1943, which compares with 40 percent or less in most local range herds. These results would indicate that feeder or slaughter calf production can be doubled in that area with the same number of cows now grazing.

(c) Studies of forest grazing were initiated in Louisiana and are now well under way in cooperation with the Louisiana Agricultural Experiment Station and other Federal agencies. As a result of preliminary studies it was possible to furnish information that reduced the impact of the drought in Louisiana this past summer. A survey of the grazing practices now used by farmers and of major problems in grazing forest range is now nearing completion. This survey will determine the better practices now in use and possibilities of their wider application, as well as furnishing a sound foundation for further studies needed to still further improve grazing management and livestock production.

Artificial revegetation investigations: Range reseeding, long considered a promising and necessary method of restoring deteriorated ranges, is playing an important role in increasing the production of meat, hides, and wool for war. Although early reseeding efforts frequently resulted in widespread failure and financial loss, significant progress in the search for adapted species and suitable methods of planting has been made, and dependable procedures for use on extensive areas have been devised. This is indicated by the success of seedings by government agencies and stockmen made during the last few years under sound technical guidance on nearly 3,000,000 acres of the more favorable range areas in the West. These successes will make it possible to give increased attention to research on other needy range areas.

Direct wartime activities include:

(a) Preparation, at the request of the Engineer Board of the Army, of concise recommendations and instructions for planting of airfields, cantonments, arsenals, and other military establishments in the arid and semiarid West for concealment, dust control, and fire hazard reduction.

(b) Other requests for guidance in planting Army and Navy bases both at home and abraod have been filled by special instructions, or by advice and help on the ground.

Other accomplishments include:

(a) Comprehensive instructions for reseeding summer ranges in Oregon were prepared in cooperation with the Oregon Agricultural Experiment Station.

(b) Popular guides have been released giving the best available information on methods of reseeding depleted ranges of Utah, Nevada, and Idaho.

(c) Grazing tests of seeded ranges in the West demonstrate that reseeding increases the grazing capacity of depleted range from 6 to more than 10 times, and that animals make excellent gains on reseeded stands.

(d) Research indicates that under some conditions judicious grazing of newly seeded stands may not be injurious and where these conditions obtain complete protection, until the first crop of seed heads is formed, is not necessary. This finding may permit dispensing with fencing and its added cost in areas where grazing can be controlled and it also permits earlier grazing than was formerly considered possible.

Range forage investigations: In this global war, it is essential that full use be made of native plants in furnishing needed supplies of such strategically important commodities as medicines, forage, fibers, food, oils, rubber, tannin, and waxes, and for other direct military uses. A basic function of this project is the accumulation of information on the identification, distribution, life history, ecological relationship, and economic value of over 20,000 species of range forage and other native plants, and the country's most complete annotated herbarium of such plants has been built up and maintained for that purpose. This huge backlog of information and observation has been drawn upon heavily and has formed a foundation for special research on analagous plants in other parts of the world. Most of the effort recently has been directed toward supplying information, in the most usable form, to fill specific requests from war agencies, including:

(a) Detail of a staff member of this unit to the Latin American Forest Resources Project in Costa Rica where he provided technical assistance looking toward full development and utilization of Central American plants for war purposes.

(b) Information was provided various agencies, including the War and Navy Departments, War Food Administration, Office of Strategic Services, Foreign Economic Administration, and Department of Commerce, on the identity, growth requirements, and uses of certain plants and plant products in human nutrition, for oil, matting, raft material, laboratory apparatus, drugs, and other purposes.

(c) Intelligent grazing management in the Pacific Northwest has been furthered by a practical publication on the identification, use, and value of native range plants of eastern Oregon and Washington.

(d) Advice was given the Quartermaster General, War Department, as to swampy localities in the far South, suitable for the testing of clothing and equipment under conditions comparable to the tropic war zones.

(f) Forest Products

Appropriation Act, 1944	$ 940,280
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+137,239
Total anticipated available, 1944	1,077,519
Budget estimate, 1945	1,077,519

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Timber harvesting and conversion investigations	$ 100,938	$ 109,455	$ 109,455	- -
2. Forest products statistics	11,133	14,490	14,490	- -
3. Paper and pulp investigations	133,469	128,800	128,800	- -
4. Timber mechanics and engineering investigations	317,146	322,414	322,414	- -
5. Seasoning and physical properties investigations	134,257	131,740	131,740	- -
6. Chemical composition and wood utilization investigations	136,393	135,810	135,810	- -
7. Wood preservation investigations	170,298	173,655	173,655	- -
8. Wood structure and growth investigations	47,463	61,155	61,155	- -

PROJECT STATEMENT (con't.)

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
Covered into Treasury in accordance with Public Law 674	2,024	- -	- -	- -
Total available	1,053,121	1,077,519	1,077,519	
Transferred to "Salaries and expenses, library"	+8,211	- -	- -	- -
Anticipated deficiency for overtime pay	- -	-137,239	- -	- -
Total estimate or appropriation	1,061,332	940,280	1,077,519	

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$ 4,176	$ 1,000	$ 1,000
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	61,332	137,239	137,239
Total cost of overtime (7 months in 1943)	65,508	138,239	138,239

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To further increase the usefulness and value of forest products in meeting war and essential civilian requirements by providing the technical services and research needed for the selection, specification, efficient use, faster production and delivery of natural, modified and converted wood products.

The Problem and its Significance: Wood continues to fill a vital role in the war effort by serving those purposes for which it has always been used, by meeting the needs for materials of special properties to be found only in modified and converted wood products, and by substituting for scarce metals and other materials. As a result of the varied and extensive use of wood innumerable problems are continually arising that require solution.

Large quantities of wood and plywood continue to be used for the construction of training and cargo planes, gliders and parts of combat planes and, while much fundamental design data has already been developed, much remains to be obtained if these materials are to be used to their maximum efficiency. Improvements in protective coatings for wood aircraft and the development of simple and effective means of repairings damaged parts are also needed.

The demand for new and improved wood containers for shipping war supplies and lend-lease food and equipment continues to expand. The containers must be economical of material, conserve critical shipping space and adequately protect the contents during shipment and storage. The detailed procedures for cleaning, rustproffing and wrapping hundreds of artillery and other items must be worked out.

The greatly expanded use of wood for such things as army truck bodies, airplane and blimp hangars, and ships and boats calls for improved methods of selection and quicker seasoning; methods for assembling laminated members; suitable bending techniques and protection against deterioration and fire.

Waste wood from logging and milling operations is an ample and low-cost source of many chemicals so essential for war needs. For example, the sugar obtainable from wood can be converted to ethyl alcohol and high protein feeding yeast. The production of alcohol and yeast from wood would help conserve the grain supply in this country for domestic and lend-lease requirements. Other essential chemicals found to be otbainable from wood include glycols, phenols, cresols, and glycerine. Research is needed to develop commercially practicable methods of producing these chemicals.

To help alleviate the paper shortage which threatens to become more acute, work is needed to develop methods for increasing yields of pulp from the wood used. Improvements in small sawmill operation are essential to help relieve the shortage of lumber.

General Plan: Practically all of the research and technical work under this appropriation is being conducted at the Forest Products Laboratory at Madison, Wisconsin, with nearly 100 percent of the appropriation being devoted to war work. The small amount of "non-war" work being done covers that required to save past research, which would be exceedingly uneconomical to abandon. The work is being done in close collaboration with the Army, Navy, War Production Board, Office of Price Administration, Civil Aeronautics Board, National Advisory Committee for Aeronautics, War Food Administration, and other war agencies and manufacturers of war products.

Examples of Progress and Current Program:

Timber harvesting and conversion investigations: The past year's work under this project included a study of gluing sawed surfaces of aircraft lumber of Sitka spruce and other species which revealed that yields of this high-quality material can be increased by as much as 25 percent over rough sawing and planing with less labor per finished lamination, which is of importance in view of existing lumber and labor shortages; made test runs of a gang saw for box lumber having a high production rate and a lower than normal manpower requirement for this acutely needed type of lumber; provided Government agencies placing contracts for gasogens (substitute for gasoline) for China with the results of the Laboratory's tests of a gasogen-operated truck; and developed a conversion unit for household heating plants to use wood fuel of various forms ranging from chunks to sawdust, as a substitute for coal and oil. Developed and disseminated information on simple methods of improving small sawmill operation to reduce manpower and equipment requirements. Assistance was given to the U. S. Army Engineers in improving the design of a portable sawmill for use in various war zones.

At present the work is continuing on methods to further improve the efficiency of small sawmill operation, on improved means of producing and utilizing wood in various forms for home heating, on further testing of gasogens, and on means of increasing the yields of aircraft quality veneer and lumber from various log grades of accepted species.

Forest products statistics: This project has been conducted continuously since 1902 in cooperation with the Bureau of the Census to collect, compile and disseminate factual information on the production, consumption and distribution of lumber and other forest products.

Nearly three years ago the emphasis in this project was changed to conform to the objectives of the much broader studies underway to furnish the Army, Navy, War Production Board, War Food Administration, Office of Price Administration and other war agencies urgently needed information on the requirements of forest products, available and potential supplies, productive capacity of forest products industries and means for increasing production.

Pulp and paper investigations: Improvements in papreg, the high-strength resin impregnated laminated paper plastic developed at the Laboratory resulted in its commercial adaptation for many war items including ammunition boxes; equipment boxes; farings, cowlings, gunner seats, gun turrets and floors for aircraft; and antiaircraft gun turrets. Experimental uses include shell cases, bomb fins, rockets, depth bombs and powder tanks. Laminated paper plastics filled with low-cost lignin from waste pulp liquor were produced which hold promise as substitutes for conventional paper laminates, and the lignin has possibilities as an extender for the critical phenolic resins used in these products.

Marked improvements were made in the properties of the waterproof, solid fibre board used in V containers for shipping war materials and food. Hundreds of commercial greaseproof and moistureproof papers for wrapping equipment for overseas shipment were tested and evaluated for the Ordnance Department. In view of the existing paper shortage, recommendations were made for obtaining the maximum yield of pulp from the wood used.

The current program includes further improving and adapting both the high strength and the lignin-filled paper plastics to war uses, increasing the yield of pulp from wood, and improving fibre boards for shipping containers.

Timber mechanics and engineering investigations: Progress under this project during the past year includes the development of much additional fundamental design data on wood and plywood of various species for aircraft; determination of the strength properties of papreg and compreg; the revision of Army-Navy specifications for aircraft lumber of spruce, yellowpoplar, Douglas-fir and western hemlock; the preparation of 50 publications on the properties and uses of wood, plywood, and papreg in aircraft and other war products; and the inspection of broken wood members of crashed airplanes for the Army, Navy, and Civil Aeronautics Board to determine the causes of failure. Hundreds of containers were redesigned or new containers designed for the Army, Navy, and Lend-Lease for the overseas shipment of equipment and supplies. Training courses for packaging inspectors given at the request of Army Ordnance, Army Air Forces, Corps of Engineers and the Navy were attended by about 3000 people.

Currently the program includes a continuation of studies to develop additional data on the strength properties of wood, plywood, and wood-base laminates; meeting the continuing heavy demand for solutions of the packaging and shipping problems for war equipment and supplies; and the improvement of design and fabrication practices in engineering construction.

Seasoning and physical properties investigations: The Army-Navy specification for drying aircraft lumber was revised. Demonstrations conducted in the Northwest showed that kilns designed for rapid drying can, with slight modifications, be adapted to the low-temperature schedules required for aircraft lumber. Army Ordnance was assisted in the preparation of a specification for kiln drying yellow birch and black cherry gunstocks and handguards. In a study originated at the request of the Navy it was demonstrated that three and four-inch white oak timbers can, with the aid of chemical seasoning agents, be seasoned with less checking than similar untreated material. A drying system was developed for goldenrod leaves which are being used for rubber production. Samples of a Laboratory-developed plastic wood (uralloy) were submitted to the Quartermaster Corps for test in special types of Army footwear. The satisfactory gluing of large assemblies of compreg and staypak for aircraft propellers and other uses was accomplished.

Underway at present is the development of a low-cost furnace kiln for drying box lumber; the inspection for the Army Air Forces of kiln drying facilities to determine their suitability for aircraft lumber; and a survey of the shipyards for the Navy to assist in solving problems on the bending, seasoning, and storage of ship timbers.

Chemical composition and wood utilization investigations: A pilot plant investigation was undertaken at the request of the War Production Board to obtain technical experience with the Scholler process, now used extensively in Germany, for the production of sugar from wood waste and its conversion into ethyl alcohol and high protein feeding yeast. The improvement and adaptability of impreg and compreg to war uses was continued. Staypak, a form of compressed wood of high density and strentgh requiring no resin in the wood structure was developed which appears promising for airplane propellers. Progress was made in the development of battery separators of wood pulp and hydrolized wood, to overcome the difficulties being experienced with the rubber separators now used in storage batteries that are shipped dry but fully charged to theatres of war. A method was developed for increasing the yield of alpha pulp from wood from which explosives, rayon for tires, lacquer finishes for aircraft and other essential war products are obtained. Of the many chemicals found to be derivable from lignin in waste pulp liquors and waste wood by hydrogenation, particular attention was given to the tar acids which contain phenols and cresols urgently needed in the war effort for the production of phenolic resins.

Currently the program includes further work on the production of wood sugar from waste wood and its conversion to ethyl alcohol and high protein feeds, improving compreg and staypak and adapting them to additional war uses, and on further increasing yields of alpha pulp from wood.

Wood preservation investigations (including investigations on veneer, plywood and gluing): At the request of the Navy and the War Production Board a method was developed for producing laminated ship timbers. Many refinements remain to be worked out and new glues which are promising for this use must be tested. The "Wood Aircraft Fabrication Manual" prepared last year for the Aeronautical Board, was revised to include the many new developments since the original manual was compiled. A new Army-Navy specification for aircraft veneer and plywood was prepared. Courses of instruction for the repair and maintenance of wood aircraft and for the inspection of aircraft wood organized at the request of the Army Air Forces and the Navy were given to more than 600 people. Other instructional courses were given for inspectors of wood ship construction and for manufacturers of aircraft veneer and plywood.

The present work includes studies on the improvement of finishes for wood aircraft; on glues and gluing techniques for aircraft and laminated ship construction; on fire-retardant treatments; and the preparation for the Army Air Forces of a maintenance and repair manual for wood aircraft.

Wood structure and growth conditions investigations: Accomplishments last year under this project included a study for the War Production Board to determine native woods that can be used for war purposes in place of such imported woods as mahogany, khaya; lignumvitae, boxwood, ironwood, teak and rattan from which it was possible to recommend native woods to replace most of the above species and thus save critical shipping space; the development of simple methods for determining the specific gravity and detecting defects such as compression failures and compression wood in aircraft quality veneer, plywood, and lumber; practical mill trials of shuttles of open-grown maple to determine its suitability as a substitute for the rapidly diminishing supply of dogwood; and an investigation for the Ordnance Department to determine the value of yellow birch, sugar maple, and red maple for gunstocks in place of black walnut.

Work now under way includes a continuation of the development of simple and rapid methods for detecting obscure defects in aircraft veneer, plywood and lumber; the effect of various defects on the physical and mechnical properties of wood aircraft parts; and finding substitute species for those woods now used in military equipment that are becoming scarce.

(g) Forest Survey

Appropriation Act, 1944	$140,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+16,246
Total anticipated available, 1944	156,246
Budget estimate, 1945	156,246

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Survey of forest resources, present and future requirements	$200,843	$156,246	$156,246	- -
Covered into Treasury in accordance with Public Law 674	929	- -	- -	- -
Unobligated balance	6,666	- -	- -	- -
Total available	208,438	156,246	156,246	- -
Transferred to "Salaries and expenses, Bureau of Agricultural Economics", economic investigations	+2,337	- -	- -	- -
Anticipated deficiency for overtime pay	- -	-16,246	- -	
Total estimate or appropriation	210,775	140,000	156,246	

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$7,445	$600	$600
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	8,146	16,246	16,246
Total cost of overtime (7 months in 1943)	15,591	16,846	16,846

*Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To furnish dependable information on the area, volume, quality, location and condition of the timber resource of the United States, and its requirements for forest products.

The Problem and its Significance: Approximately 630 million acres, or one-third of the total land area of the United States is in forest. These forests constitute one of the most important renewable natural resources of the country. They supply the major part of the nation's consumption of lumber, pulpwood, fuel wood, chemical wood, poles, posts, piling, etc.; provide labor income for a large portion of the population; and afford the best use of the bulk of the land involved. Cutting has gone on since settlement and the bulk of the remaining virgin timber now being cut is confined to the western states. Production of forest products in the rest of the country is confined chiefly to second growth. The point has been reached where careful stock-taking is essential in order that public and private agencies may develop plans and programs which will assure adequate supplies of forest products for the future and to develop a sound basis for forest land management. Previous to undertaking the present survey, there never had been an adequate determination of the extent, location character, and condition of the forest resources or the rate at which they are being depleted, or of the present and probable future consumption of forest products.

The job of the forest survey is to inventory the forest resources of the nation by a system of sampling to obtain information on area, location, volume, and condition of timber, growth, depletion, etc., and to ascertain the present and future trends in our forest products requirements. Careful analysis and interpretation of these data are basic to a full understanding of the forest situation and the maximum needs for timber, to the development of principles, policies, and plans for permanent forest production and to the stabilization of forest employment. Present war requirements for forest products and anticipated civilian needs after the war are currently focusing attention on the supply of timber because of serious shortages in

critical species, the importance of forests as a crop, and the high place wood may be expected to hold in the normal markets after the war.

General Plan: The forest survey was initiated in 1930. The objective is accomplished by a field inventory and analysis of both public and private lands and a study of current and prospective production and consumption of forest products and the influencing factors. The inventory field work is being done under the direction of the regional Forest Experiment Stations and the requirements phase by a central unit in Washington, with general supervision of both from the office of the Chief of the Forest Service in Washington. The general plan is to cover unsurveyed territory as rapidly as conditions will permit. Findings of the survey are compiled, analyzed, and reports are issued by counties or groups of counties, States, and forest regions as soon as possible after completion of the field inventory, and subsequently the data for the territory covered are brought up to date from time to time through field checks in order to keep the information current. Following the completion of the entire country by the initial inventory, the aim will be to keep the data current thereafter.

Progress and Current Program: To date, 305 million acres have been covered by the initial inventory, leaving 325 million acres to complete. Between 75 and 85 percent of the area surveyed has been reported on in 221 reports and forest-type maps on all or parts of 16 States, mostly in the South, Appalachians, Lake States, Inland Empire, and the Pacific Coast. Of these, 18 forest inventory reports and two on requirements--one for lumber on farms and the other for shipping purposes--were issued in the past year. Collection of forest depletion information and growth computations, both required in keeping the survey figures current, were only partially completed on account of a shortage of funds for this purpose. The survey of new country was discontinued at the beginning of the war, and the work since that time has been directed to finishing uncompleted reports, keeping the data current on surveyed areas, and supplying information and services to war agencies on timber resources and forest products requirements necessary for the war effort.

The war situation has created demands by war agencies and forest products industries for current information on the location, available quantities, accessibility, processing facilities, and present and prospective requirements and supply of over-all lumber, specialty-production lumber--such as for ship timbers and aircraft--pulpwood, aircraft veneer, naval stores, wood distillation products, cooperage, poles, piling, fuel wood, tannin, and other products as a basis for planning a war production of these materials. The forest survey, supplemented in part by funds from the War Production Board, is undertaking to meet this wartime need by compiling and supplying information on timber supplies already obtained by field surveys, reanalyzing data to meet such war problems, making spot surveys of critically needed species in uninventoried territories, helping to

canvass primary forest industries to determine lumber and timber production, making special field cruises to appraise the quality and quantity of species suited to special purposes such as aircraft lumber and veneer, and making periodic estimates of current requirements for forest products.

Current plans are to give priority to supplying information required by war agencies and, as time permits, to keep the forest inventory information as nearly up-to-date as facilities will permit. The data on lumber and timber manufacture are useful in computing drain on the forest resource. Likewise, the information being compiled on requirements contributes to one of the major objectives of the forest survey. With the current appropriation, and the greatly increased cutting during war time it will not be possible to make satisfactory progress in every respect in keeping the data current for the portion of the country that has been covered by the survey. No new areas will be inventoried this year under the standard survey procedure.

(h) Forest Economics

Appropriation Act, 1944	$ 75,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+10,404
Total anticipated available, 1944	85,404
Budget estimate, 1945	85,404

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Financial aspects of forestry investigations	$ 51,052	$56,367	$56,367	- -
2. Stumpage, log, and lumber price investigations	14,250	9,076	9,076	- -
3. Range economics investigations	13,730	8,575	8,575	- -
4. Economic-social benefits of forestry investigations	22,405	11,386	11,386	- -
5. New public domain investigations	18,253	- -	- -	- -
Covered into Treasury in accordance with Public Law 674	500	- -	- -	- -
Unobligated balance	1,993	- -	- -	- -
Total available	122,183	85,404	85,404	- -
Anticipated deficiency for overtime pay	- -	-10,404	- -	- -
Total estimate or appropriation	122,183	75,000	85,404	

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$4,883	$ - -	$ - -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	3,183	10,404	10,404
Total cost of overtime (7 months in 1943)..	8,066	10,404	10,404

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To furnish information and advice needed in solving the problems associated with the transition from unregulated forest exploitation to permanently productive forests, in developing stable forest industries, in determining sound programs of public acquisition of forest lands, in formulating economically and socially practicable forest land-use principles, and in meeting demands for information and other special services arising out of war activities.

The Problem and its Significance: There is a constant and urgent demand for information, consultation, special reports, "hot-spot" investigations, and numerous specialized services which personnel on this project are peculiarly fitted by training and experience to handle with maximum speed and efficiency. The war agencies dealing with the production, distribution, use, and price controls of the many forest products call on Forest Service economists frequently for special reports and data, and various staff members are in almost continuous contact with these agencies through conferences.

Since nearly every forestry problem has important economic aspects, solutions must involve economic considerations and the data and analysis needed can be furnished only by specially trained personnel. The economic problems urgently requiring solution include the following: What constitutes a sound economic foundation for sustained-yield management of forested lands? Where and under what conditions and to what extent can improved forestry practices be made financially feasible? How may data on costs and returns be utilized and interpreted to serve as a guide to more effective land-use and forest management practices? Under what circumstances is public ownership more suitable and economical than private ownership of forest lands?

Other problems of high priority that require economic study and analysis, frequently in correlation with other forest research, are those resulting from large-scale abandonment of cutover lands, and those requiring a formulation of practical methods of placing the small reserves of virgin timber on a sustained-yield basis. Also included are problems necessitating the collection and analysis of current data on prices of forest products, on the economic aspects of cooperative associations for the management of woodlands and marketing of the products received therefrom, on the economic effects of alternative patterns of range privilege distribution on national forest lands, on the rehabilitation of resources and people in submarginal forest communities and, of immediate and paramount importance, on many aspects of forestry arising as a result of war needs.

General Plan: Highest priority is given those activities where the information and skills developed by this project contribute most to the war effort. Forest economics investigations are in process at five of the forest experiment stations and at the Washington office where a small staff of technicians is maintained. Cooperative working relationships exist with a number of other groups, including State experiment stations, universities, trade associations, the Bureau of Census, some war agencies and other Federal bureaus.

Examples of Progress and Current Programs:

Financial aspects of forestry investigations: The personnel on this project have been in considerable demand for consultation with war agencies. Because of need for greater production of forest items, studies have been made in critical regions to ascertain the minimum diameter of trees to cut in relation to the most efficient use of manpower and equipment in the logging and sawing of second-growth areas. Other war activities of the project include the study of demand-price-supply relationships to aid in maintaining an uninterrupted flow of forest products for war uses; the investigation of transportation problems from woods to mills with recommended methods of securing greater economy and efficiency in the use of available facilities; the participation by the field personnel in the census of lumber production; the surveying of forest industries where critical supply situations arise; and the study of boxing and barrel problems with suggestions for relieving bottlenecks.

Fundamentally, this project has two phases. The first is a study of the financial aspects of commercially owned forests to determine the extent to which improved forestry practices are economically feasible and may contribute to a community's industrial stabilization and welfare. Work has been centered largely at the Southern and Pacific Northwest Forest Experiment Stations but is now suspended at the latter station because of lack of sufficient funds.

At the Southern Station, where work centers around the Crossett Experimental Forest (Arkansas), which is typical of the pine-hardwood forests of Arkansas, Louisiana, and Texas, business management methods are applied to forest stands and ways are tested to meet ownership expenses -- such as taxes, fire protection, forest utilization, roads, thinnings, and other stand improvements -- and yet leave sufficient net income to warrant continuous forest ownership and improvement. Many owners of sawmills in this region are faced with the problem of adjusting to sustained yield in order to continue industrial operation, or of clear-cutting and then quitting. The problem is emphasized because of the current stress on greater production for war needs.

The findings to date indicate that the prospects of profitable sustained yield from these young pine-hardwood stands far outweigh the merits of a cut-out and move-on policy. Studies show that a small selective cut per acre, when made according to tested practices, results in profitable logging without denuding the land. The methods so far developed and proved are being adopted by several owners of the larger forest properties in this forest type. The methods are also being carried to small properties through farm forestry projects and cooperative agency efforts to aid owners of small woodlands. During the past year many forest owners, including farmers with wooded areas, visited the experimental tract to observe cutting practices and obtain information on timber yields in relation to costs and returns.

There remains to be made tests of the financially practical cutting cycle -- the interval at which an operator should wait before returning to an area for another timber cut -- and of the manner of cutting and the type and quality of forest product resulting. Because of its value as a guide to forest owners and forest industry, the importance of continuity in the cutting schedules and records cannot be overstressed.

The second phase of the project is an investigation of the economic problems of farm woodlands. Emphasis is placed upon methods whereby farm woods can be made to contribute more to their owners' incomes and to stabilize local woods industries, while at the same time aiding in the greater production of forest products needed for the war. Work on a maintenance basis is carried on at each of the Allegheny, Central, and Lake States Experiment Stations.

At the Allegheny, a project in Otsego County, New York, aims to study economic problems involved in the establishment and development of forest cooperatives. This farm-forest cooperative association, composed of approximately a thousand members, still is in the developmental stage, and is a "testing ground" for obtaining data which potentially are of nation-wide significance for the future of farm-forestry cooperatives. Control of timber cutting has been established on all members' lands, and the woodlands are becoming an increasingly valuable part of the farm enterprise.

Work was nearing completion at the Central States Experiment Station in cooperation with the various State agricultural experiment stations on an analysis of the present and future of farm woodlands in the economy of the Corn Belt States.

Studies in the Lake States concern present and potential contributions of typical small farm woodlands to the rural economy. Practices required for good forest management, and probable yields, costs and returns were studied in relation to the size of farm woodlots which can be operated per family. Much of the current effort is directed toward aid of several farm-forest cooperative associations on technical problems of increasing production of needed forest products for the war.

Stumpage, log and lumber price investigations: These investigations involving the collection and interpretation of data on stumpage, logs, and lumber prices have been particularly valuable in the war effort.

Statistical releases and analyses pertaining to these data normally are issued annually. During the war, however, the information is in such great demand by war agencies that special compilations are made from time to time. The OPA has made use of the data extensively in connection with controls over stumpage lumber and log prices and the WPB has used the data to study the effects of prices and proposed price controls on lumber production. This has involved intensification of the work in several directions.

In addition to the uses made of the statistics by war agencies, trade associations, private lumber operators and various research agencies request for use in their work, information obtained by this project.

Economic-social benefits of forestry investigations: The investigation under this project is pointing out the possibilities of solving the forest resources problems of the Pennsylvania Anthracite region by restoring the one great replaceable natural resource -- the forests. In its recent report to the President, the Federal Anthracite Commission included the specific recommendation that the forestry investigations in the Anthracite region be intensified and expedited. One and a half million people, living on about four million acres which at present provides but a single declining industry -- the mining of hard coal -- present a serious social and economic problem.

Resources are being analyzed by counties. A study of one county for example, shows how the forests and forest industries gradually could be increased to at least 10 times its present figure and how income to forest owners could be raised five times to reach an estimated total value of $7,500,000. At the same time the county tax base would be widened, the flood hazards in the region reduced, and the recreational opportunities immeasurably expanded. Studies for other counties in the Anthracite territory are yielding similarly significant results.

The initial field survey in the region was completed during the year. Data are now available on the resources of 9 of the 15 counties. A new technique of field survey was developed to make possible a hundred percent canvass of merchantable tracts within each county. These data are being made available to war agencies and to sawmill and mine-timber operators.

Other contributions to the war effort made by this project include: Furnishing forest cover, ownership, and land-use maps to military personnel; participation in the census of lumber production; and contributing to special surveys of critical species.

Range economics investigations: The range research program, currently continued on a limited basis due to reduction in funds, is integrated with the Department's war objectives of obtaining higher meat production. Technical assistance is provided range administrators, and special jobs include analyzing available data on meeting livestock production goals by reducing losses and increasing market weights, without further deterioration of range lands. Information is also provided for the immediate use of stockmen regarding the relative efficiency of various sizes and types of range livestock operations and methods of coordinating and adjusting the use of open range, range property and feed crops.

The livestock industry in the Intermountain region, where all work on this project thus far has been conducted, embraces an area of 145 million acres of range land. The livestock industry in this region supports a substantial proportion of the local population. Large numbers of sheep and cattle are supplied to local and Nation-wide markets for wool and meat. The industry depends wholly on adequate and sustained forage resources for its healthy existence and growth, requiring wise use of both public and private lands. The economic basis for planning such use calls for comprehensive and continuing research. Economic aspects relative to overstocking of ranges, deterioration of forage crops, distribution of and charges for use privileges on public range lands, extent of such use, conflicting land uses, and range land taxation, valuation, and financing are involved.

New public domain investigations: The objective of this project was to cope with the problems resulting from wholesale abandonment, through tax delinquency, of cutover forest land by private owners.

The tax reversion trend has declined in some regions recently, but in others is continuing unabated. The past year was devoted to completing studies under way and writing reports. The project has been discontinued.

(i) Forest Influences

Appropriation Act, 1944	$75,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+11,762
Total anticipated available, 1944	86,762
Budget estimate, 1945	86,762

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Investigations of the influence of forests on streamflow	$ 93,485	$ 86,762	$ 86,762	- -
2. Investigations of utilization of water by trees	24,064	- -	- -	- -
3. Investigations of stabilizing soils	17,420	- -	- -	- -
4. Investigations of the effect of forest cover on climate	6,204	- -	- -	- -
Covered into Treasury in accordance with Public Law 674	400	- -	- -	- -
Unobligated balance	264	- -	- -	- -
Total available	141,837	86,762	86,762	- -
Anticipated deficiency for overtime pay	- -	-11,762	- -	
Total estimate or appropriation	141,837	75,000	86,762	

Statement of Overtime Costs

	1943	Est.1944	Est.1945
Overtime absorbed	*$1,264	$ - -	$ - -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	8,837	11,762	11,762
Total cost of overtime (7 months in 1943)	10,101	11,762	11,762

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To obtain and furnish factual information as a basis for management of forest and range lands on important watersheds (a) to provide more uniform streamflow, (b) to insure or augment available water supplies, and (c) to reduce flood and related damages.

The Problem and its Significance: Appropriate management practices are applicable to a tremendous area of wild land (public and private) at the headwaters of rivers -- land which directly affects large values and interests in water resources. The value of this land for water production is estimated at from $3 to $25 per acre. Resulting flood damages from the loss of the cover in some cases has been over $1,000 per contributing acre.

The value of water is exceedingly high. In 1940, nearly 1,000,000 acres of irrigated land produced agricultural crops worth about $15,000,000; about 95 percent of the water so used came from forested watersheds. Shortages of irrigation water at the present time threaten food production goals. About a billion dollars worth of electrical energy was generated by hydroelectric plants in 1940; about 85 percent of the water so used came from forested watersheds. Hundreds of municipalities, including such centers as New York, San Francisco, Oakland, Seattle, Portland, and San Diego, obtain all or most of their water supply directly from forested watersheds.

Millions of dollars of damages are caused annually by floods and sedinentation which also threaten the well-being and security of people. Many reservoirs for municipal supply, irrigation, power, and flood control have lost an alarming amount of their effective capacity due to siltation, largely due to removal or depletion of the natural cover on the watershed. Navigation of rivers and harbors is being constantly hampered by sediments which can be removed only by costly dredging.

Every important watershed of the Nation contains some of its 630,000,000 acres of forest and 585,000,000 acres of non-forest range land. About 50 percent of this immense area has high watershed protective value, and 25 percent additional has a moderate value. Of all the States, only Delaware and Florida do not contain forest lands with known important water relations.

The public has acquired a large area of these forest and range lands. This ownership, therefore, suggests management in the public interest, especially when such lands have high watershed value. Furthermore, as many of these lands are in a badly depleted state when acquired, restorative measures are essential to bring about desirable waterflow conditions.

Federal and State policies as to the management, use, and ownership of forest and range lands have been based on scanty information as to the relation of these lands to water. Although some of these policies are possibly correct in the main, they need modification or restriction when applied to limited areas or given sets of conditions. Facts upon which to base such specific application are wholly inadequate.

Furthermore, public works programs being developed for these lands in the interest of the water resource may not achieve their avowed purpose, or if they do, may prove too costly or achieve results in too long a time. Facts as to the value of specific proposed measures to increase water yield, regularize flow, reduce flood losses, and prevent erosion, are either largely absent or are too few on which to base programs involving millions of dollars.

General Plan: Forest influences research is being developed in accordance with a national overall plan to insure attack upon only the most urgent problems and to prevent duplication. It is conducted at present as part of the program at five of the regional Forest Experiment Stations. The investigations are conducted at especially developed field branches representative of conditions over a considerable area. At each, a series of small experimental drainage basins with typical natural cover have been so equipped as to permit measurement of all phases of the water cycle. After the flow for a given basin has been standardized (several years required) cover conditions are modified as required. Continuity of operation is therefore essential. In carrying out the work, cooperation with other agencies is effected whenever possible. The present capital investment in the installed facilities and equipment at these stations is about $3,500,000.

The past research program has been radically reduced under war conditions. The available funds are being used to carry the most essential long-time work on a strictly maintenance basis, in an effort to safeguard the heavy investments in money and prevent serious losses in time after the war in completing studies previously started. All other activities have either been wholly suspended or reduced to the barest minimum sufficient to permit meeting emergencies and special requests.

Some Results and Their Application:

More water for municipalities: Many municipalities (such as Asheville, N.C., Lynchburg, Va., etc.) obtain their domestic water supplies directly from forested watersheds. When imminent shortages must be averted and an expansion of the current supply system cannot quickly be made, a serious situation arises. Such a shortage can be met in part at least by treating the watershed cover as indicated by the following results:

The flow from small drainages exhibits a cyclic phenomenon; highest flow occurs at night, lowest at midday. Experiments indicate that removing the larger vegetation (trees and shrubs) from the stream banks eliminates this diurnal fluctuation. The water loss saved in one season amounted to about 10 percent of the flow. The complete removal of all the larger vegetation from another nearby experimental watershed resulted in an even greater yield of water. This increase amounted to 50 percent of the normal flow, roughly equivalent to an added precipitation of about 12 inches over the area. In addition a saving of 3 inches of water that normally would be lost by evaporation from the tree crowns was saved.

More water for irrigation: Agricultural expansion in many irrigated areas has resulted in overuse of the water supply. Severe water shortages periodically develop with attendant recurring crop failures. As most irrigation water is derived from forested watersheds, a change in the cover may be reflected in streamflow. Investigations show that additional water can be obtained from these basins. Thus, by removing certain types of lodgepole pine trees, evaporation from snow held by their crowns is prevented and snow caught in the openings thus made melts slowly and is absorbed into the ground. Studies show that cutting 5 acres of timber in this type will conserve sufficient water to irrigate one acre of valley land.

Predicting irrigation water supply: Two months advance knowledge of abundance or scarcity of irrigation water in early spring would permit many western farmers to plan for the coming season with some assurance. For example, in a short year in the Salt River Valley of Arizona, African sorghum could be used instead of cotton, as the former crop uses only 2 acre feet of water whereas cotton uses 5 acre feet. Large crop savings are thus possible. Investigations demonstrate that the flow from certain small experimental watersheds can provide a good index of the flow of a main river. This prediction method promises to be of great value. When applied to 28 years of record for the Roosevelt reservoir, it was found that an 8 to 10 weeks advance prediction missed the actual flow of Salt River into the reservoir by only 14 percent.

(j) Forest Fire Cooperation

Appropriation Act, 1944	$6,300,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+34,917
Total anticipated available, 1944	6,334,917
Budget estimate, 1945	5,000,000
Decrease	-1,334,917

PROJECT STATEMENT

Project	1943	1944 (Estimated)	1945 (Estimated)	Increase or decrease
1. Cooperation with States in forest fire prevention and suppression	$3,901,299	$6,284,610	$5,000,000	-$1,284,610 (1)
2. Taxation inquiry and insurance	43,257	50,307	- -	- 50,307 (2)
Covered into Treasury in accordance with Public Law 674	2,487	- -	- -	- -
Unobligated balance	47,167	- -	- -	- -
Total available	3,994,210	6,334,917	5,000,000	- 1,334,917
Transferred to "Salaries and expenses, Bureau of Agricultural Economics" economic investigations	+7,790	- -	- -	
Anticipated deficiency for overtime pay	- -	- 34,917	- -	
Total estimate or appropriation	4,002,000	6,300,000	5,000,000	

DECREASE

The decrease of $1,334,917 in this item for 1945 consists of:

(1) A decrease of $1,284,610 under the project "Cooperation with States in forest fire prevention and suppression." This reduction will be met by reducing the standards of protection or withdrawing Federal assistance entirely on areas of State and private lands where increased protection efforts were formerly considered of national importance because of the war.

(2) A decrease of $50,307 under the project "Taxation inquiry and insurance." This project will be discontinued in 1945.

Statement of Overtime Costs

	1943	Est.1944	Est.1945
Overtime absorbed	*$11,277	- -	$32,659
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	2,000	$34,917	- -
Total cost of overtime (7 months in 1943)	13,277	34,917	32,659

*Difference between overtime cost and supplemental appropriation

WORK UNDER THIS APPROPRIATION

Objective: To extend Federal aid in continuing and improving the pre-war standards of essential fire control on the 291,000,000 acres of state and private forest and watershed lands now being protected and to cooperate in the extension of forest protection to part of the remaining 137,000,000 acres of non-Federal lands needing, but not now receiving, organized protection. Fire control objectives are (1) to prevent fires from starting and (2) to detect and suppress all fires which do occur.

The Problem and its Significance: Over three-fourths of the Nation's forest lands are in state and private ownership. These lands are providing at least 90% of the wood required for war and other essential needs. Safeguarding this supply of raw material is of fundamental importance.

The war has complicated and increased the cost of fire control. Key fire fighters have joined the armed forces or left for more remunerative jobs in war and industrial plants. Salaries and wages are higher and costs of all fire fighting tools and equipment have mounted. State protection personnel turnovers of 50 percent are not uncommon.

The loss of Civilian Conservation Corps camps has made the protection job more difficult. In 1935 there were 633 such camps assisting in the construction of forest fire improvements and furnishing a backlog of approximately 126,000 trained fire fighters on state and private areas. This number of camps was gradually reduced to 271 in 1941 and then to 65 in 1942. Now all are gone. In order to hold fire suppression costs to a minimum it is now necessary for the states to hire and train special suppression crews so that trained fire fighters will be readily available. This appropriation is intended partly to help the states in meeting these added costs in order to maintain pre-war levels of fire control. It is also

needed to initiate or strengthen protection on areas of special importance from a military standpoint. Forest fires destroy wood needed for war and other essential uses. Large fires can readily destroy or damage important facilities, military establishments and plants producing war materials. They interfere with aviation training and coastal patrol. The Navy claims fires along the coast endanger shipping. Due to the scarcity of fire fighters, fires divert manpower from war work and from agriculture.

The Clarke-McNary Law, enacted in 1924, has been very effective in stimulating protection by state and local agencies. Federal leadership stimulates state legislative action and gives stability to trained protection organizations. Appropriations by the states and private land owners have shown steady and substantial increases. For the fiscal year 1944 state and private funds are available in the amount of $11,287,968. The Clarke-McNary Law provides for 50-50 Federal sharing in expenditures.

During calendar year 1942 there was reported a total of 75,849 fires on the 291,000,000 acres of protected state and private forest lands. These fires burned 3,862,756 acres and caused over $11,000,000 damage. On the 136,687,000 acres which have not yet been placed under organized protection, there were 122,000 fires. 1.32 percent of the protected area was burned over - but forest fires ranged over 20 percent of the unprotected area. The actual value of organized protection is shown by the fact that although 38 percent of all the fires occurred on protected lands, only 12 percent of the acreage burned was on protected land.

General Plan: The cooperative fire protective program is administered on the ground by the states under agreements and plans developed jointly by Federal and state officers. Each state annually presents a budget showing state and other funds set up for the work. In brief, adequate protection involves a comprehensive fire plan embodying: (1) a program to prevent fires and eliminate abnormal hazards; (2) a system for rapidly detecting and reporting fires; (3) necessary improvements for communication and transportation; (4) suitable fire fighting equipment and supplies; (5) a competent and adequate supervisory force; (6) dependable crews of trained fire fighters; and (7) at times the employment of large numbers of untrained men. Adequate inspection is made by the Forest Service to see that high standards of organization and compliance are maintained. Grants to the individual states are made on a reimbursement basis, that is, expenditure must be made by the state before any reimbursement is granted.

Progress and Current Program:

Payments to states for cooperative forest fire prevention and suppression: Under the Forest Fire Cooperation programs in 42 States and Hawaii in the fiscal year 1942, approximately 291 million acres of state and privately owned forest lands were protected from forest fires. Organized fire protection is still lacking on approximately 137 million acres. During the 17 years since the Clarke-McNary program was initiated the average annual gain in area protected has been about 7,000,000 acres per year. For the fiscal year 1944 other than Federal funds are being provided by the states and private owners to the total amount of $11,000,000. Such increases as have been made in Federal funds have served as a stimulus to increased state and private funds and not as replacements for such funds. The more poorly financed states are enabled by these Federal allotments to extend their fire control activities and place more forest acres under protection. In the better financed forestry departments the Federal assistance enables them to intensify their work and thus secure a greater reduction in forest fire losses. In the fiscal year 1943, of all funds spent under this program about 70 percent was provided by the states and by private forest owners as against about 30 percent by the Federal Government. As previously stated, the Clarke- McNary Law authorizes 50-50 participation.

STATE ALLOTMENTS FOR FOREST FIRE COOPERATION FISCAL YEAR 1944

State	State and Private: Funds Budgeted	Federal Allotments Matched	Federal Allotments Unmatched
Alabama	$221,500	$117,834	$53,735
Arkansas	171,166	107,812	24,131
California	2,299,052	682,948	51,738
Colorado	136,274	15,787	--
Connecticut	88,274	24,965	15,000
Delaware	11,325	3,000	4,500
Florida	309,317	179,790	128,801
Georgia	199,283	107,495	54,945
Idaho (N)	195,204	66,010	29,700
Idaho (S)	29,317	16,971	7,700
Illinois	43,130	6,960	7,500
Indiana	51,899	12,950	9,735
Kentucky	38,748	29,200	23,150
Louisiana	217,744	107,486	12,195
Maine	106,439	70,826	21,918
Maryland	101,906	21,606	125,200
Massachusetts	195,070	50,985	22,057
Michigan	594,196	221,440	20,000
Minnesota	311,416	137,373	24,232
Mississippi	148,599	78,663	41,715
Missouri	45,421	26,955	21,200
Montana	121,626	43,975	12,000
Nevada	8,962	3,414	--
New Hampshire	80,416	24,517	13,200
New Jersey	183,986	53,223	40,000
New Mexico	23,031	5,339	--
New York	444,793	98,979	17,000
North Carolina	211,046	95,577	87,355
Ohio	58,956	13,648	15,000
Oklahoma	31,959	28,451	--
Oregon	1,032,326	316,878	386,000
Pennsylvania	317,382	69,646	10,000
Rhode Island	50,151	7,357	5,000
South Carolina	315,340	104,457	82,269
South Dakota	9,223	1,957	--
Tennessee	96,209	57,068	43,965
Texas	123,346	69,864	44,665
Utah	18,037	7,766	1,000
Vermont	46,125	19,525	10,000
Virginia	125,099	51,101	161,260
Washington	1,746,138	414,754	337,750
West Virginia	230,443	52,910	15,000
Wisconsin	489,439	145,186	23,000
Hawaii	7,455	1,117	--
Contingent and Reserve for Spring Season		10,000	202,634
Adm. and Inspection		165,928	93,750
Taxation and Ins. Studies		50,307	
Grand Totals	$11,286,768	$4,000,000	$2,300,000

Forest taxation investigations: The more urgent requests for aid on taxation problems have been met and attention given to the problems of financing adequate protection in states where Federal aid on forest fire protection is extended.

Several years work on the problem of federal contributions in lieu of taxes on national forest lands culminated in the issuance of the Federal Real Estate Board's report, "Federal Contributions to States and Local Governmental Units with Respect to Federally Owned Real Estate." The recommendations of the Board were based on and are wholly consistent with the plan developed by the taxation staff of the Forest Service, but expanded and generalized for application to the several types of federally owned conservation lands. The release of the Board's report constitutes a major landmark on the road to a permanent solution of the problem of national forest contributions to state and local finances. The analyses of local tax rate series which were being carried on in the Southern and Pacific coast states have been discontinued.

Examples of current jobs regarding taxation matters are: Assisting the States of Virginia, New Hampshire and Tennessee on state forestry taxation problems; cooperating with the Tax Committee of the Forestry Committee of the Council of State Governments, on a survey of forest taxation and related problems of contributions; and cooperating with Treasury officials on a study of the effect of certain income tax rulings and proposed legislative changes on forestry practices.

The investigations of the problems of financing adequate forest fire protection involves analysis of the amount and distribution of benefits from fire control to establish a basis for estimating the justifiable taxation and total expenditures for protection and for allocating those costs among private, state and federal taxing bodies. Results of this study are needed, for example, for application in allocating federal cooperative fire control money among the 42 states qualifying under the Clark-McNary Law.

No provision is made in the 1945 Budget estimates for continuation of this project.

(k) Forest Fire Control (Emergency)

This budget schedule covers obligations in 1943 under the unobligated balance of a prior year appropriation made in recognition of the need for intensifying and augmenting forest fire control efforts on forest lands during the war period. Its scope included all Federal lands under the administration of the Department of Agriculture, and lands in State, municipal and private ownership. Its availability extended from April 28, 1942 to June 30, 1943. These funds were used: (a) to safeguard military areas and war facilities from forest fires; (b) to

prevent disruption of military activities and training; (c) to prevent diversion of manpower from logging, milling, farm, and other important war work; (d) to prevent smoke blankets around flying fields and training areas; and (e) to prevent large conflagrations which disrupt communities, destroy forest products needed for the war and disrupt communication, transportation, and power facilities.

In the fiscal years 1944 and 1945 the need for strengthening the fire control efforts was recognized by increasing the appropriations "National forest protection and management" and "Forest fire cooperation".

Statement of Overtime Costs

	1943	Est.1944	Est.1945
Overtime absorbed	113,268	- -	- -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	- -
Total cost of overtime (7 months in 1943)	113,268	- -	- -

(1) Farm and other Private Forestry Cooperation

Appropriation Act, 1944	$746,168
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+ 51,063
Total anticipated available, 1944	797,231
Budget estimate, 1945	781,466
Decrease	- 15,765

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Cooperation with States in the procurement, production, and distribution of forest-tree and shrub seeds and plants for farmers (Forest Service):				
Under Clarke-McNary Act, section 4.	$83,148	$83,700	$83,700	
Under Norris-Doxey Act	37,705	39,300	39,300	
Total, Project 1	120,853	123,000	123,000	- -
2. Cooperation with States for extension activities in developing farm forestry (Extension Service):				
Under Clarke-McNary Act, section 5.	59,418	65,728	65,728	
Under Norris-Doxey Act	32,279	42,652	42,652	
Total, Project 2	91,697	108,380	108,380	- -
3. Cooperation with States in carrying out farm forestry operations, including intensive projects and technical service to farmers and to legally competent and adequate organizations of farmers:				
Under Norris-Doxey Act:				
Forest Service	22,031	22,659	22,659	
Soil Conservation Service	123,516	146,788	146,788	
Total, Project 3	145,547	169,447	169,447	- -
4. Farm Forestry investigations (Forest Service): Under Norris-Doxey Act	17,442	22,945	22,945	- -
5. Prairie States Farm Forestry (Soil Conservation Service): Under Norris-Doxey Act	72,981	- -	- -	- -
6. Technical services to farmers in harvesting, marketing, and utilization of farm wood products (Forest Service): Under Norris-Doxey Act	137,430	257,694	257,694	- -
7. Cooperation with timberland owners in formulating and applying principles of sustained yield management (Forest Service)	113,043	115,765	100,000	-15,765 (1)
Covered into Treasury in accordance with Public Law 674	2,332	- -	- -	- -
Unobligated balance	109,117	- -	- -	- -
Total available	810,442	797,231	781,466	-15,765
Transferred to other appropriations (as shown in Budget schedules)	+3,558	- -	- -	
Anticipated deficiency for overtime pay	- -	-51,063	- -	
Total estimate or appropriation	814,000	746,168	781,466	

DECREASE

(1) The decrease of $15,765 in 1945 in Project No. 7, "Cooperation with timberland owners in formulating and applying principles of sustained yield management", will be effected by reductions in force.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$24,118	- -	- -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	$51,063	$49,828
Total cost of overtime (7 months in 1943)	24,118	51,063	49,828

WORK UNDER THIS APPROPRIATION

Activities under this appropriation fall into three general categories:

1. Cooperation with States in the procurement, production, and distribution of forest tree and shrub seeds and plants for farmers.

2. Technical assistance and advice to 3-1/2 million farmers owning woodlots totalling 185 million acres.

3. Advice to owners of industrial forestry holdings, large and small, in order to promote better forestry practices.

1. TREE DISTRIBUTION: The following tabulation shows the number of forest tree seedlings and transplants distributed to farmers by states during the last three calendar years:

State	1940	1941	1942
Alabama	1,947,000	3,709,700	1,540,450
Arkansas	1,653,250	2,616,500	1,516,796
Connecticut	219,200	89,500	103,800
Delaware	125,500	89,200	31,500
Florida	3,795,000	6,314,600	3,007,100
Georgia	13,400,551	10,356,180	6,892,345
Hawaii	264,000	126,700	86,100
Idaho	246,400	290,765	204,000
Illinois	1,902,900	2,931,000	6,536,300
Indiana	1,540,797	1,691,800	1,299,070
Iowa	2,063,513	1,772,817	837,308
Kansas	478,500	559,000	479,700
Kentucky	977,100	936,800	495,700
Louisiana	3,772,900	2,327,135	1,565,998
Maine	300,025	169,500	134,150
Maryland	392,300	335,600	160,725
Massachusetts	686,300	616,400	476,900
Michigan	4,115,800	2,568,050	2,696,654
Mississippi	2,398,000	9,787,000	4,551,700
Missouri	1,055,000	1,535,900	1,195,700
Montana	423,300	338,000	295,200
Nebraska	846,200	911,200	863,800
New Hampshire	378,200	348,175	306,775
New Jersey	843,700	1,187,700	727,750
New York	9,109,000	7,107,000	5,640,000
North Carolina	1,156,855	2,412,330	1,436,800
North Dakota	558,900	609,500	662,600
Ohio	2,281,789	2,466,595	2,109,191
Oklahoma	419,700	769,300	655,400
Oregon	277,600	385,500	366,000
Pennsylvania	7,353,000	4,952,300	3,808,500
South Carolina	8,057,800	9,666,318	7,442,237
South Dakota	541,000	615,300	764,500
Tennessee	5,831,400	3,452,900	1,929,300
Texas	933,900	1,065,000	2,223,900
Utah	131,500	143,500	69,100
Vermont	661,628	1,013,900	319,700
Virginia	818,520	1,242,805	590,900
Washington	98,100	300,620	67,685
West Virginia	984,740	579,800	638,990
Wisconsin	3,546,600	7,728,300	8,518,000
Wyoming	126,400	115,100	73,500
Colorado	463,500	352,800	234,500
Puerto Rico	290,700	1,062,000	662,200
Total	87,468,068	97,650,090	74,218,524

The decrease of over 23 million in number of trees distributed in the calendar year 1942 was a direct result of the war situation with the attendant shortage of help on the farms. The State nurseries are, however, being maintained in condition to quickly expand as soon as the war is over, with an anticipated production of 200,000,000 trees two years thereafter.

This stock will be important for post-war work and is counted upon in that connection.

During the fiscal year 1943 the States made $432,473 available for the work, in addition to the Federal appropriation of $123,000.

2. Activities to reach the farmers:

Farm woodlands yield about one-third of our nation's forest products. One-fourth of the total sawlog supply, 38 percent of our pulpwood supply, and a large quantity of veneer logs originate on farms. In addition to this, farm woodlots furnish the bulk of fuelwood and fence-post requirements of the United States. Many of the specialty woods important in the war, such as black walnut for gun stocks and dogwood for shuttle blocks, are harvested from farm woodlots. During the past year and because of the national emergency, work with farmers has been directed toward emphasizing the importance of increased production of urgently needed forest products and, at the same time, discouraging destructive overcutting so that the basic resources of woodlots can be assured for future timber crops. This program throughout is a cooperative undertaking in which all state and federal agencies in the field of forestry are encouraged to participate. The agencies in the field include the State Extension Services, the State Foresters, the Soil Conservation Districts, and the Agricultural Experiment Stations. Likewise, Federal agencies that touch forestry have a part in the program, such as the Soil Conservation Service, Forest Service and Extension Service. To prevent duplication of effort and to insure maximum coordination, the work in each State has been carefully assigned to specific agencies under a definite program, defining objectives and responsibility and financial obligations. The Federal effort is largely one of stimulating general interest, guidance, and coordination of effort. The actual work on the ground is carried on largely under direction of state agencies.

(a) EXTENSION: To reach the farmers effectively, it has been necessary to have more than one single approach. The farm forestry specialists of the State Extension Services, working through County Agricultural Agents, have taken the responsibility for the general extension effort with farmer groups, and in reaching rural youth through the 4-H Clubs. Fifty-five State Extension Foresters were employed during the past fiscal year in 43 states and two territories. They conducted programs through some 4,000 County Agricultural Agents and exerted considerable influence among farmers in persuading them to adopt improved farm-forestry practices. These Extension Foresters also had an important part to play in promoting an emergency program for rural fire control which contributed to a $10,000,000 reduction in farm fire losses below that of the previous year.

(b) DEMONSTRATION PROJECTS: The second group of activities in reaching the farmers deals with demonstration projects in farm forestry. A demonstration project is a well-known device by which selected farms are used as demonstration areas, to which County Agents, Extension Foresters and others may bring potential farmer clients to see the work on the ground. The demonstration projects, carried on cooperatively with the States, have been under way for a number of years and have been located as far as Federal and cooperative funds would permit in all of the important timber states. There is a total of 55 projects now under way, located in 38 states. The Soil Conservation Service has established 45 of these projects and the Forest Service has established 10.

(c) MARKETING ASSISTANCE PROJECTS: The third way of reaching farmers - under way for only one year - is included under the head of technical services to farmers in harvesting, marketing, and utilizing farm products. This is a program of direct contacts with farmers, which has been exceptionally well received by cooperating State agencies and farmers. Wood products from farm woodlots and extra labor that farmers have contributed in its harvesting have had particular significance during the war emergency. In stimulating production, emphasis on good sound forest practice has not been forgotten. The program has, therefore, had as its objective stimulating production and getting better forest practice. Farmers have been brought in contact with buyers of wood products and have been given help and guidance to see that they secure a fair price for their products. Buyers are encouraged to see that it is to their advantage in the long run for farmers to get a fair price for their products and for woodlots to be left in good productive shape to assure the vital continuous log supply required by dependent mills.

During the fiscal year, 66 such projects were established in 24 states, covering approximately 240 counties. Although many of these projects have been in operation only a few months, substantial progress can be reported, measured in terms of farmers served and products harvested. A total of 3,984 farmers requested assistance in harvesting, marketing, and other woodland management problems. 626 farmers performed harvest and improvement cutting as recommended by farm foresters on 35,614 acres. Products removed totaled 37,382 M board feet of sawlogs, 1,981 M board feet of veneer logs, 16,165 cords of pulpwood, 187,524 lineal feet of piling, 5,429 poles, 21,085 ties, 8,089 cords of fuelwood, 48,500 mine props, 19,424 fence posts, and approximately 1,580 M board feet of other wood products. Also, 9,885 gallons of maple syrup and 2,331 bbls. of gum were produced.

Typical examples of the services performed by the farm forester are well illustrated by the following:

Dubuque Project, Iowa: A farmer owned 40 acres of oak timber and, needing cash, had decided to sell his entire stumpage. The farm forester cruised the tract and marked 70 M board feet to cut, leaving a residual stand of 74 M board feet. He assisted the farmer to locate a market where the higher grade oak could be sold for ship stock and car stock. He also located for the farmer a sawmill operator equipped to saw ship stock. The best stumpage price the farmer had been offered was $10-12 per M board feet. By marketing his oak as sawn stock, he will net $20 per M board feet.

Baxley Project, Georgia: Mr. L. R. Boatwright was clearing a patch of woods for cultivation. Using his own small portable sawmill he was sawing all the larger trees into lumber. Small trees and tops of those sawn into lumber were being piled and burned. On advice from the farm forester, a pulpwood buyer contacted Mr. Boatwright and arrangements were made to buy his pulpwood loaded on the railroad car. At the time the field report was made, one car had been shipped at a net profit of about $40 and several more were to be shipped in the near future.

Mr. C. L. Graham considered selling his farm, comprising 140 acres of crop land and 860 acres of woods, for $20 an acre. Fire protection for a number of years had resulted in a good growth of timber on most of the woodland area. Thinning and improvement cutting were necessary. Following advice of the farm forester, Mr. Graham used his own truck and farm labor in making a pulpwood thinning. The first carload of 11 units was cut from one acre. He received $93.50 for the wood. After deducting $3.75 per unit for labor, and $2 for truck depreciation and operation, he realized a net profit of $30.25 from the first acre thinned. He plans to cut hardwood for pulpwood from timber along his stream branches this summer and to cut cross ties from worked-out turpentine trees. Tops and smaller trees will be cut into pulpwood. Young stands will be thinned during the fall and winter. As a direct result of this program, Mr. Graham's farm labor is being furnished employment year round. He is glad that he did not accept the $20 per acre offered for his entire farm.

(d) FARM FORESTRY INVESTIGATIONS: Fuelwood shortages in the East and the general severe shortage of construction lumber resulting from the war emphasize the importance and potentialities of farm forests as sources of both types of forest products. Additional information is needed to improve the efficiency not only of production and local transportation of these products but in their proper utilization locally. The most urgent of these problems are: fuelwood studies in the Northeast; utilization of local lumber for local needs and woodland grazing management studies in the Lake States; studies to locate and determine quantities and qualities of local timber supplies in the Central States; and studies of methods of cutting and utilization of inferior or neglected species in the deep South. All of these investigations are being carried on under cooperative agreements with the State Agricultural Experiment Stations requiring the states to provide funds or services at least equal to Federal expenditures.

3. Cooperation with Industrial Timberland Owners:

Approximately 2,500 owners of industrial timber holdings have been reached under this special program of work. The owners contacted own about 37 million acres, or 11.7 percent of the total acreage in private ownership. A recent survey indicates that where this work has been under way with such owners, there has been a material improvement in forest-management practices by 73 percent of those contacted. Through this work, 19 million acres were put under improved forest management.

A number of economic studies in cooperation with large timberland owners, especially on the West Coast and in the Lake States, were undertaken during the fiscal year 1943. The individual owners usually contributed 50 percent of the cost of these studies and furnished personnel who were trained in the field and office procedures used.

A large number of small commercial timberland owners were assisted by advising them, in response to requests, concerning the cutting and management of their timber products. These owners are too often at the mercy of the wood product buyers who are apt to dictate both the price and type of cutting.

The major aim in this work is to get the maximum number of owners to embark ultimately on a sustained-yield operation. The nature of this work requires highly specialized forestry technicians who must know silviculture, logging, milling, and also have an understanding of economic factors which influence investments and profits in sustained-yield operations.

Supervision and administration of the naval stores agricultural conservation program was provided for the AAA, including inspections of the conservation practices of 3,000 participants, involving payments in excess of one million dollars.

(m) Acquisition of Lands for National Forests

Appropriation Act, 1944	$100,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	16,077
Total anticipated available, 1944	116,077
Budget estimate, 1945	75,000
Decrease	- 41,077

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Acquisition of lands for national forests	$290,114	$116,077	$75,000	- $41,077 (1)
Covered into Treasury in accordance with Public Law 674	+ 4,748	- -	- -	- -
Total available	294,862	116,077	75,000	- 41,077
Transferred to other appropriations (as shown in Budget schedules)	+ 59,348	- -	- -	
Anticipated deficiency for overtime pay		- 16,077		
Total estimate or appropriation	354,210	100,000	75,000	

DECREASE

(1) The decrease of $41,077 in this item for 1945 results from the cessation of the acquisition program. The $75,000 remaining is required to perform work necessary to consummate in the fiscal year 1945, the purchase of land contracted for purchase in prior years, but which will not be vested in Federal ownership prior to the close of the fiscal year 1944.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$19,869	$400	$400
Additional funds for overtime (appropriated, 1943; estimated supplemental, 1944; and included in budget estimate, 1945)	- -	16,077	11,419
Total cost of overtime (7 months in 1943)	19,869	16,477	11,819

WORK UNDER THIS APPROPRIATION

General: The work under this appropriation is concerned with the acquisition of land by the Government for national forest purposes under authority of the Act of Congress of March 1, 1911 (36 Stat. 961), as amended particularly by the Act of June 7, 1924 (43 Stat. 653). While the land purchase program has been temporarily discontinued the following outline of the activities normally carried on under this appropriation is submitted for record purposes.

Objective: The long-term objective of this appropriation has been to vest in Federal ownership (a) all lands chiefly valuable for forest purposes within 76 national forest purchase units in 31 states and Puerto Rico, established under the provisions of the aforementioned Acts, and (b) lands in other areas which should be Federally owned and managed; and to so protect and manage such lands as adequately to safeguard the watersheds of navigable rivers and streams and insure future timber supplies. Rehabilitation of blighted regions, stabilization of industries and communities; provision of employment opportunity; and perpetuation and protection of scenic and wildlife resources, are collateral consequences of the basic purposes.

The Problem and its Significance: Privately owned lands on the headwaters of navigable rivers are subject to heavy cutting of timber, over-grazing, improper cultivation and the destructive forces of fires, insects and disease. Such misuse has greatly impaired the absorptive capacity of the soil of much of this land, thereby contributing to

floodwater conditions and siltation of river channels. The restoration of such forest lands to their natural state and normal high capacity to absorb precipitation is essential to the maintenance of the navigability of rivers. Because of their very vital relationship to the economic welfare of the Nation, as major watersheds and sources of timber supply for future needs, their proper protection and management is of primary importance to the country.

Future availability of supplies of commercially usable timber adequate to national needs can be assured only by effective protection of all existing virgin and advanced second-growth forests from denudation by destructive forces, excessive cutting and general waste. Optimum restoration of forest cover, by natural methods of reproduction or by planting, is essential on all other lands chiefly valuable for the growing of trees.

Plan: The work under this project normally consists of vesting in Federal ownership those lands within the 76 purchase units that are offered for sale to the United States and which are chiefly valuable for forest purposes. During the fiscal year 1943, 59,005 acres were acquired in existing purchase units, mainly through land exchange. In addition, the organization financed from the appropriation completed the action on cases involving 198,754 acres of land which had been approved for purchase in earlier years.

Revenues: Fees from the sale of timber, grazing, special uses and other sources approximating $2,068,000 were collected from the 76 national forests and purchase units under this project and deposited in the Treasury for the fiscal year 1943. Twenty-five percent of this sum will be returned to the counties in which the forests are located for maintenance of schools and roads and 10 percent will be used for national forest roads. The annual revenue has been progressively increasing and is expected to continue to increase as the lands bought years ago begin to produce returns from maturing timber and other resources which have been developed or renewed by proper protection and management.

(n) Special Research Fund, Department of Agriculture
(Allotment to Forest Service)

This budget schedule covers obligations in the past year under an allotment for research work on bioclimatics and phenology. The project was discontinued at the close of the fiscal year 1943.

(o) Conservation and Use of Agricultural Land Resources
(Allotment to Forest Service)

This budget schedule covers obligations under an allotment for general administration of the Naval Stores Conservation Program of the Agricultural Adjustment Agency.

(p) Local Administration, Section 388, Agricultural Adjustment Act of 1938
(Allotment to Forest Service)

This budget schedule covers obligations under an allotment for local administrative expenses of the Naval Stores Conservation Program of the Agricultural Adjustment Agency. (See item (o) above).

(q) Loans, Grants, and Rural Rehabilitation
(Allotment to Forest Service)

This budget schedule covers obligations in the past year under an allotment for the administration of certain rural rehabilitation projects. The allotment was discontinued early in the fiscal year 1943.

(r) White Pine Blister Rust Control
(Transfer to Forest Service)

This budget schedule covers obligations for blister rust control work on the National Forests. A discussion of the work is contained in the Explanatory Notes for the item "White Pine Blister Rust Control".

(s) Flood Control, General (Transfer to Agriculture)
(Allotment to Forest Service)

This Budget schedule covers obligations for (1) preliminary examinations and surveys, and (2) works of improvement on the headwaters of streams, including upstream engineering, soil stabilization and reforestation on selected watersheds authorized by various Flood Control Acts. Preliminary examinations and surveys were discontinued on June 30, 1943.

(t) Salaries and Expenses, War Production Board
(Transfer to Forest Service)

This budget schedule covers obligations incurred in obtaining information on requirements, production, and supplies of forest products for the War Production Board. The schedule includes obligations for the fiscal year 1943 only. In the fiscal year 1944, funds were provided under a "working fund" advance to the Forest Service pursuant to Section 601 of the Economy Act (see item (w) below).

(u) Ordnance Service and Supplies, War Department
(Transfer to Forest Service)

This budget schedule covers obligations for work on the development of non-metallic land mines for the War Department in the fiscal year 1944.

(v) Emergency Relief, Agriculture
(Transfer to Forest Service)

This budget schedule covers obligations relating to work of planning and review of W.P.A. projects during the early months of the fiscal year 1943.

(w) Working Funds (Forest Service)

This budget schedule covers obligations under advances to the Forest Service, pursuant to Section 601 of the Economy Act of June 30, 1932, for services performed for various agencies as indicated in the "Statement of Obligations Under Supplemental Funds", supra.

SPECIAL ACCOUNTS

(X) Payments to States and Territories from the National Forests Fund

Appropriation Act, 1944 (revised)	$2,475,655
Budget estimate, 1945	2,475,655

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)
Payments to states and territories from national forest funds	$1,670,043	$2,475,655	$2,475,655

The law requires that 25 percent of all money received from the national forest during any fiscal year be paid to the states and territories in which the forests are located. The amount of this appropriation varies each year in direct proportion to national forest receipts during the previous fiscal year. Increases in this appropriation are offset by additional revenue to the Federal Treasury.

(y) Payments to School Funds, Arizona, and New Mexico, National Forests Fund

Appropriation Act, 1944 (revised)	$26,888
Budget estimate, 1945	26,888

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)
Payments to school funds, Arizona and New Mexico, national forests fund	$ 22,834	$ 26,888	$ 26,888
Unobligated balance	558		
Total estimate or appropriation	23,392	26,888	26,888

The States of Arizona and New Mexico are reimbursed in such proportion of the gross proceeds of all the National Forests within those states as the area of land granted to the states for school purposes within the National Forests bears to the total area of all national forests within the States.

These payments are required by the Act of June 20, 1910 (36 Stat. 562 and 573) which provides "That the grants of Sections two, sixteen, thirty-two and thirty-six to said state, within National Forests now existing or proclaimed, shall not vest the title to said section in said state ....but said granted sections shall be administered as a part of said forests, and at the close of each fiscal year there shall be paid to the Secretary of State, as income for its common-school fund, such proportion of the gross proceeds of all the national forests within said state as the area of lands hereby granted to said state for school purposes which are situated within said forest reserves .... may bear to the total area of all the National Forests within said state .... the amount necessary for such payments being appropriated and made available annually from any money in the Treasury not otherwise appropriated."

School lands are given the same form of management accorded adjacent national forest lands.

As soon after the close of the fiscal year as the receipts from national forests, and the area of school lands in the States of Arizona and New Mexico are authoritatively determined, the payments referred to above are made to the states. Payments in fiscal year 1944 were $26,624 to Arizona and $264 to New Mexico.

(z) Roads and Trails for States, National Forests Fund

Appropriation Act, 1944 (revised)	$990,262
Budget estimate, 1945	990,262

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)
Roads and trails for States, National Forests fund	$376,997	$990,262	$ 990,262
1942 balance available in 1943	- 641,624	- -	- -
1943 balance available in 1944	+ 932,114	- 932,114	- -
1944 balance available in 1945	- -	+ 932,114	- 932,114
1945 balance available in 1946	- -	- -	+ 932,114
Total	667,487	990,262	990,262

An additional 10 percent of all moneys received from the National forest during each fiscal year is available at the end thereof to be expended by the Secretary of Agriculture for the construction and maintenance of roads and trails within the national forest in the states from which such proceeds are derived. (16 U.S.C. 50).

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$27,338	$120,071	$120,071
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	- -
Total cost of overtime (7months in 1943)	27,338	120,071	120,071

(aa) Cooperative Work, Forest Service

Appropriation Act, 1944	$2,000,000
Budget estimate, 1945	2,000,000

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)
1. Construction of improvements	$ 280,432	$ 290,000	$ 290,000
2. Maintenance of improvements	310,454	310,000	310,000
3. Prevention and suppression of forest fires	563,365	600,000	600,000
4. Disposal of brush and other debris in timber-sale operations	341,124	640,000	640,000
5. Forest investigations	59,169	70,000	70,000
6. Administration	52,777	55,000	55,000
7. Reforestation	14,544	15,000	15,000
8. Refunds to cooperators	24,819	20,000	20,000
Total available	1,646,684	2,000,000	2,000,000
1942 balance available in 1943	-2,001,371	- -	- -
1943 balance available in 1944	+2,712,229	-2,712,229	- -
1944 balance available in 1945	- -	+2,712,229	-2,712,229
1945 balance available in 1946	- -	- -	+2,712,229
Total estimate or appropriation	2,357,542	2,000,000	2,000,000

Contributed funds are placed in this trust account, to facilitate the accomplishment of certain projects within the list of activities shown in the project statement, which are of mutual benefit to the Forest Service and to individuals, other public or private agencies, or organizations; to provide for the equitable division of the cost of projects; and to simplify completion by concentrating the direction of the projects under one head.

Many desirable proposed projects are of potential benefit to both the Forest Service and a second party. It is in the public interest to see that the other party or parties defray their fair share of the expense of such projects. This is especially true in the case of fire prevention and suppression on private lands intermingled with national forest lands inasmuch as the Government must necessarily suppress fires on nearby lands regardless of ownership in order to protect its own property. In the case of brush disposal on national forest timber sales, this method of collecting from the operator as he cuts the timber insures the proper disposal of the debris resulting from the sale.

This authorization provides and efficient method of collecting a proportionate part of the cost of projects from other agencies, organizations, or individuals, when intermingled interests dictate that their share of the benefit justifies their participation in the expense.

The terms under which cooperative projects are undertaken are reduced to writing and are signed by both parties. In the case of brush disposal, however, the contract for the sale of timber outlines the cooperative arrangement between the Government and the operator.

Progress and Current Program: The most satisfactory way of showing trends in this appropriation is through a comparison of total deposits by years. A table showing deposits in the fiscal years 1942 and 1943 is given below:

Projects	1942	1943	Changes
Construction and maintenance of improvements (includes roads)	$856,367	$690,539	-$165,828
Prevention and suppression of forest fires	584,834	655,311	+ 70,477
Disposal of brush and other debris in timber sale operations	585,236	905,297	+320,061
Forest investigations	60,805	46,436	- 14,369
Reforestation	17,001	10,078	- 6,923
Administration	59,598	63,705	4,107
Totals	2,163,841	2,371,366	207,525

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS

Item	Obligations, 1943	Estimated obligations, 1944	Estimated obligations, 1945
Special Research Fund: Research in bioclimatics and phenology	$ 3,137	- -	- -
Conservation and Use of Agricultural Land Resources: Cooperation with AAA in Administration of the Naval Stores Conservation Program	57,700	$40,799	$32,640
Local Administration, Section 388, Agricultural Adjustment Act of 1938: Cooperation with AAA in Administration of the Naval Stores Conservation Program	148,472	168,672	135,000
Loans, Grants, and Rural Rehabilitation: For administration of certain rural rehabilitation projects	1,495	- -	- -

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS (CONT'D)

Item	Obligations, 1943	Estimated obligations, 1944	Estimated obligations, 1945
White Pine Blister Rust Control:			
For Blister rust control on National forests.....	893,799	1,018,160	1,219,900
Flood Control, General: Preliminary examinations and surveys, and works of improvement, etc., watersheds authorized by Flood Control Acts	245,091	89,084	50,000
Salaries and Expenses, War Production Board: Supplying information to War Production Board on production and requirements of forest products	242,971	- -	- -
Ordnance Service and Supplies, War Department: Development of nonmetallic mines	- -	20,000	- -
Emergency relief, Agriculture, Forest Service: Planning and review of Works Projects Administration projects	507	- -	- -
Working Funds, Agriculture, (Forest Service) Advance from War Department:			
Air Defense Command, for winterizing and operating observation stations essential to the Aircraft Warning Service	3,730,364	3,086,887	--
Army Air Forces, for strength studies of wood, plywood, and glues for use in aircraft. (Joint project with Navy)	103,562	100,588	- -
Army Air Forces, general research and development program--plastics, glue evaluation, seasoning, etc., for aircraft. (Joint project with Navy)..	75,687	92,613	- -
Engineer Corps, for mapping strategic areas.....	550,405	247,687	- -
Engineer Corps, for drafting aeronautical charts..	33,519	4,540	- -

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS (CONT'D)

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Ordnance Department, for solving packaging and container problems, and for instruction courses in container construction and packaging	394,056	300,018	- -
Army Air Forces, for solving packaging and container problems	3,330	56,671	- -
Ordnance Department, investigation of lumber problems involved in packaging Army Ordnance items	3,264	4,758	- -
Army Air Forces, Air Service Command, for instruction courses on container construction and packaging	- -	19,900	- -
Army Air Forces, Material Command, for instruction courses for inspectors of aircraft wood, and instruction courses in container design	39,314	95,286	- -
Army Air Forces, Training and Air Service Command, for instruction courses in wood aircraft maintenance	4,566	18,114	- -
Engineer Corps, for protection of maneuver area, West Virginia	- -	43,083	- -
For examination, appraisal, abstracting, and other expenses in connection with the acquisition of privately owned lands	919	43	- -
Total, War Department	4,938,986	4,070,188	--
Advances from Navy Department:			
Bureau of Aeronautics, for strength studies of wood, plywood, and glues in aircraft, (Joint project with Army):	103,562	100,588	—
Bureau of Aeronautics, general research and development program: plastics, glue evaluation, seasoning, etc. for aircraft. (Joint project with Army)	65,967	85,933	- -

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS (CONT'D)

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Bureau of Supplies and Accounts, for instruction courses in container construction and packaging for Navy personnel.	7,311	4,088	- -
Bureau of Ships, for instruction courses in wood inspection, for Navy personnel	3,044	156	- -
Bureau of Ships, for studies relating to the use of wood in boats, including laminated construction fireproofing, preservation, etc.	6,183	34,507	- -
Bureau of Ordnance and Stores, development of plastic cartridge cases	2,188	4,812	- -
Total, Navy Department ...	188,255	230,084	- -
Advances from Interior Department:			
National Park Service, construction of a road from Las Vegas, Nevada, to Three Kids Mine	43,215	21,785	- -
For protection of Oregon and California R.R. and Reconveyed Coos Bay Wagon Road grant lands located within the boundaries of national forests.	14,943	21,866	- -
For protection of certain public lands under the jurisdiction of the General Land Office	982	212	- -
Relocation of Forest Service facilities on lands subject to flooding from Shasta Dam, California ...	23,441	37,487	- -
Reconstruction of Forest Service telephone lines to eliminate power interference caused by Bonneville project	4,801	6,726	---
Total, Interior Department	87,382	88,076	- -

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Advance from Federal Works Agency: Public Roads Administration, for investigation of applications, and construction, maintenance, and improvement of access roads to sources of raw materials	2,016,765	2,002,735	- -
Advance from Federal Power Commission for investigation and supervision of Federal Power Commission projects	476	1,000	- -
Advance from Commerce Department, Bureau of Census, for collection of forest products data	13,323	- -	- -
Advance from Office for Emergency Management for use of the facilities of the Forest Service in Alaska to provide fiscal, personnel and procurement services	4,983	13,153	- -
Advance from Coordinator of Inter-American Affairs for a survey of Forest resources in other American Republics	39,140	10,860	- -
Advance from Office of Price Administration for pulpwood price and trade practice survey	5,999	1	- -
Advance from Office of Scientific Research Development for photostating secret documents.	- -	20,000	- -
Advances from Foreign Economic Administration: For survey of balsa wood resources in South America	- -	9,800	
For survey of cinchona resources of Colombia	6,963	8,118	
For ozalid prints	- -	500	- -
Total, Foreign Economic Administration	6,963	18,418	- -
Advances from War Production Board: Lumber Division, for stimulating the production of forest products, especially lumber and pulpwood, needed in the war effort	- -	440,000	- -

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Lumber and Lumber Products Division, for gathering and furnishing information on the production, requirements, and supplies of forest products ..	- -	150,000	- -
Office of Production Research and Development, for a pilot plant study of laminating ship timbers	9,562	15,438	- -
Office of Production Research and Development, for a pilot plant study of the Scholler process (German) for the production of wood sugar and its conversion to ethyl alcohol	4,196	18,033	- -
Office of Production Research and Development, for a study of the production of high protein feeding yeast from wood sugar	- -	7,694	- -
Office of Production Research and Development, for a study of the production of wood sugar by the modified American process - rotary digester, etc.	- -	17,718	- -
For a survey of pulpwood production in the United States	7,582	7,778	- -
Total, War Production Board	21,340	656,661	- -
Advance from War Labor Board for study of job classification of woods workers in Pacific Northwest	5,729	4,271	- -
Advance from Selective Service System for operating Civilian Public Service Camps	- -	196,234	- -
Advance from Farm Security Administration for payments in lieu of taxes, and for insurance of Government property on Sublimity (Kentucky) and Drummond (Wisconsin) rural rehabilitation projects	5,240	7,243	- -
Total, Working Funds	7,334,581	7,318,924	- -

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Cooperative Work, Forest Service:			
Cooperative work in forest investigations, or the protection and improvement of the national forests	1,646,684	2,000,000	2,000,000
Total, obligations under supplemental funds	10,574,437	10,655,639	3,737,570

FOREST ROADS AND TRAILS

Appropriation Act, 1944	$3,778,723 a/
Anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943	+712,000
Total anticipated available, 1944	$4,490,723
Budget estimate, 1945	4,161,496
Decrease	- 329,227

a/ Includes a reappropriation of $1,241,555.

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Forest Highways	$3,173,750	- -	- -	- -
2. Forest Road Development	3,777,973	$4,484,723	$4,161,496	-$323,227 (1)
Transferred to: "Salaries and expenses, Procurement Division", Treasury Department	750	6,000	- -	-6,000 (2)
Covered into Treasury in accordance with Public Law 674	12,862	- -	- -	- -
Total available	6,964,585	~~4,484,723~~ 4,490,723	4,161,496	-329,227
Transferred to "Salaries and expenses, Bureau of Agricultural Economics", economic investigations	+34,665	- -	- -	
1943 "Forest Highways" appropriation available in 1944 for "Forest Road Development"	- -	-1,241,555	- -	
Anticipated deficiency for overtime pay	- -	-712,000	- -	
Total estimate or appropriation	7,000,000	2,537,168	4,161,496	

DECREASE

The decrease of $329,227 in this item for 1945 consists of:

(1) A decrease of $323,227 in the project "Forest Road Development" composed of:

(a) A decrease in working funds of $164,550, which will be effected by deferring maintenance work on selected projects.

(b) A reduction of $158,677 in the amount required for overtime pay in the fiscal year 1945 as compared with 1944.

(2) A decrease of $6,000 due to the elimination in 1945 of a transfer made in 1944 to the Procurement Division, Treasury Department, for expenses of operating the San Francisco, California, warehouse facilities transferred from the Forest Service in 1943 pursuant to provisions of Executive Order 9235. The Forest Service, however,

will presumably have to continue paying for the supply service through a surcharge on all supplies and materials furnished and services rendered.

CHANGE OF LANGUAGE

The Budget estimate proposes the deletion of a portion of the language of this item as follows (deleted matter enclosed with brackets):

> For carrying out the provisions of section 23 of the Federal Highway Act approved November 9, 1921, as amended (23 U.S.C. 23, 23a), and for the construction, reconstruction, and maintenance of roads and trails on experimental areas under Forest Service administration, including not to exceed [$59,500] $70,000 for personal services in the District of Columbia, [$2,537,168] $4,161,496 for forest development roads and trails, [representing the balance of the amount authorized to be appropriated therefor for the fiscal year 1943 by the Act of September 5, 1940 (54 Stat. 867), together with $1,241,555 from the unobligated balances of previous appropriations for forest highways which is hereby reappropriated for forest development roads and trails; in all, $3,778,723,] to be immediately available and to remain available until expended: Provided, That this appropriation shall be available for the rental, purchase, or construction of buildings necessary for the storage and repair of equipment and supplies used for road and trail construction and maintenance, but the total cost of any such building purchased or constructed under this authorization shall not exceed $7,500.

This proviso has been eliminated for two reasons:

1. The amounts authorized to be appropriated under the act of September 5, 1940, for Forest Road Development have been exhausted by the appropriation of $2,537,168 for the fiscal year 1944.

2. The balances now available in the Forest Highway fund are needed to meet obligations pertaining to that program which will mature during the remainder of 1944 and the fiscal year 1945. Accordingly, no part of the appropriation for Forest Highways will be available for making the appropriation for Forest Road Development maintenance.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$241,057	$30,000	$30,000
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	712,000	553,323
Total cost of overtime (7 months in 1943)	241,057	742,000	583,323

WORK UNDER THIS APPROPRIATION

Forest Highways:

Objective: To complete the Forest Highway system which consists of forest roads which are of primary importance to the States, counties, or communities within adjoining, or adjacent to the national forests. The status of the system on June 30, 1943:

	Miles	Percent
Satisfactory standard	12,361	51
Unsatisfactory standard	10,933	45
Nonexisting	1,140	4
Total	24,434	100

The Problem and its Significance: The Federal Government has a definite obligation to the public to provide for adequate highway transportation necessary to the national forests and of primary importance to the States, counties, or communities. The highway transportation system in and near national forests should for obvious reasons be advanced in step with connecting highways. During the war very little work except necessary maintenance is planned.

General Plan:

Maintenance: The cooperative agreements in practically all cases provide for Federal financing of maintenance for only the two-year period following completion of construction and for State and county financing thereafter. The estimate of necessary maintenance for the fiscal year 1945 involves work on approximately 1,000 miles of Forest Highways.

Construction program: The long-term program is the reconstruction or betterment of the 10,933 miles which are now existing but of unsatisfactory standards, and the construction of 1,140 miles of highways, where none now exist.

For the most part, this program will be deferred until after the war. Only an approximate $1,200,000 was expended for construction during the fiscal year 1943. As the few projects under way are completed, construction work will approach a complete stop.

Forest Development Roads and Trails:

Objective: The ultimate objective is to complete the forest road and trail system. The needs have been determined by a systematic transportation planning method based on a land-use plan to accomplish the desirable development and long-term utilization of forest lands and resources. The transportation plan is currently revised to meet changing transportation requirements for resource development, protection, and utilization.

During the war the objective is to do the maintenance work necessary to preserve the Federal investment in the existing system and to provide for essential war-time travel. The existing system includes 101,083 miles of truck trails and 150,100 of foot and horse trails necessary for the protection and administration of the national forest lands and resources. Many of the roads are used to haul strategic materials, principally timber and minerals.

The Forest Road Development Fund will all be needed for necessary maintenance. No construction work is planned for the fiscal year 1945.

The Problem and its Significance: The gross national forest area is approximately 10 percent of the entire area of the continental United States. The area is generally rough, rugged, mountainous, and remote. Forest resources are critical materials now. They include 565 billion board feet of commercial saw timber besides many other timber, land, and water resources. Some 80,000,000 acres of the national forests are utilized for grazing of over 12,000,000 sheep, goats, cattle, and horses each year. Developed and undeveloped water power amounts to 11 million horsepower. Mineral resources in the forests, especially such as chrome, tungsten, copper, mercury, are vital to the war program. Nearly four million people live in or near the national forests.

Providing the transportation system necessary for the proper and efficient administration, protection, development, and utilization of the national forest land and resources is an obligation of the Federal Government.

General Plan: On June 30, 1943, the planned Forest Development Road System consisted of the following miles of existing and proposed truck-trails and trails:

	Truck-trails		Trails	
	Miles	Percent	Miles	Percent
Satisfactory standard	62,489	48	115,084	68
Unsatisfactory standard	38,594	30	35,016	21
Nonexisting	29,391	22	18,852	11
Total	130,474	100	168,952	100

Current Program: No work is anticipated for the reconstruction and betterment required on the 38,594 miles of truck-trails and the 35,016 miles of trails which are now existing but of inadequate standard to meet the needs. Nor is construction work contemplated on the 29,391 miles of truck-trails and 18,852 miles of trails now non-existent but which are considered necessary for the national forest administration, protection, utilization, and development.

The program for 1945 is to maintain the existing system as required to preserve the investment, and to provide for travel of war necessity such as fire control, production of strategic materials including the products of agriculture and grazing lands, and for essential travel to serve communities in and near the forests. It also contemplates deferring any maintenance work that can be postponed without adversely affecting the Federal investment or impeding necessary war-time travel.

PASSENGER-CARRYING VEHICLES

The authorization for the purchase of passenger-carrying vehicles for the Forest Service from appropriations other than Forest Roads and Trails provides for the replacement of 74 vehicles at an estimated net cost of $66,120.

From the appropriation Forest Roads and Trails an authorization which will provide for the replacement of 15 vehicles is recommended at an estimated net cost of $12,700.

While the 1945 purchase program calls for the replacement of 89 passenger vehicles, actually all of the old vehicles to be replaced may not be turned in on the purchase of new automobiles. It has been found to be more economical in some of the western regions, because of shop facilities and the difficulty of obtaining parts for some of the older cars, to dismantle the old automobiles, using the serviceable parts so far as possible in the repair of other passenger vehicles and disposing of the remainder through exchange in the purchase of new repair parts.

Practically all of the old vehicles to be replaced are of 1938 model or older, the majority being of 1936, 1937, and 1938 models. These machines have been operated under practically all conditions of use, the greater portion of which has been over rough forest roads. The average mileage of the vehicles when replaced will be approximately 70,000.

EMERGENCY RUBBER PROJECT

Appropriation Act, 1944 (Direct appropriation)	$13,048,000
Budget estimate, 1945 (Reappropriation of a portion of 1942 and 1943 balances)	5,420,000
Decrease	-7,628,000

CONSOLIDATED PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease	
1. Guayule	$19,254,146	$11,447,464	$ 5,338,990	-$6,108,474	(1)
2. Kok-saghyz	467,359	1,127,774	- -	-1,127,774	(2)
3. Goldenrod	251,414	426,752	- -	-426,752	(3)
4. Cryptostegia	73,326	46,010	81,010	+35,000	(4)
5. Rabbitbrush (Chrysothamnus Sp.)	7,956	- -	- -	- -	
Total obligations	20,059,201	13,048,000	5,420,000	-7,628,000	
Unobligated balance of prior year funds available in 1943	-8,868,564	- -	- -		
Unobligated balance of 1943 funds available in 1945	+5,420,000		-5,420,000		
Estimated savings, unobligated balance	+ 2,389,363	- -	- -		
Total, estimate or appropriation	19,000,000	13,048,000	- -		

INCREASES OR DECREASES

The net decrease of $7,628,000 in this item for 1945 consists of:

(1) A decrease of $6,108,474 in work on guayule due to termination of the planting program. No additional plantation lands will be leased. Nursery operations will be discontinued. The project will be put on a maintenance basis except for continuation of a curtailed research program, operation of the rubber extraction mill at Salinas, California, and erection and operation of a new mill at Bakersfield, California.

(2) A decrease of $1,127,774 due to discontinuance of the kok-saghyz program.

(3) A decrease of $426,752 due to discontinuance of the goldenrod program.

(4) An increase of $35,000 to accelerate investigations of problems on recovery of rubber from Cryptostegia.

Objective of Research on Cryptostegia: To develop on an industrial basis a commercially feasible process for the manufacture of rubber from stems and leaves of Cryptostegia.

Significance: By the invasion of the Dutch and British Colonies in the East, we were cut off from the source of 96 percent of our natural rubber. Every effort has been made to develop new sources. One of the plants to which consideration has been given is the Cryptostegia rubber vine.

The development of Cryptostegia as an emergency source of natural rubber is part of the over-all rubber production program. Although the bulk of our rubber needs will be met by the output of synthetic rubber factories now in operation, it is highly important that we secure all possible quantities of natural rubber, especially for military and essential commercial transportation. Large Cryptostegia plantings have been made in Haiti under the auspices of the Board of Economic Warfare and the Rubber Development Corporation with an anticipated eventual annual rubber production of about 12,000 tons.

On this basis, a contract was made by the Board of Economic Warfare with the Haitian corporation, the Societe Haitiano-Americaine de Developpement Agricole (commonly known as SHADA) for the planting of up to 100,000 acres of Cryptostegia. This planting was to be done on contract, the United States Government paying the costs. Consideration was given to similar contracts for the cultivation of Cryptostegia in Mexico and other portions of Latin America, but no further contracts reached the stage of consummation. The contract with SHADA provides that they will plant up to 100,000 acres of Cryptostegia but that planting will continue only to December 31, 1943. Reports indicate that the full 100,000 acres of Cryptostegia will not be planted by that time--unofficial estimates on the total planting possible running from 70,000 to 85,000 acres.

Actual production of rubber has been initiated already in some areas that were planted earliest. Rubber produced has been of excellent grade and only slightly inferior to first-quality Hevea rubber.

The Problem: Cryptostegia plantings were begun without full knowledge of the best ways of obtaining rubber from Cryptostegia. By the utilization of small test plantings and areas of wild plants, certain studies to determine ways by which rubber might be obtained from Cryptostegia have been possible.

The present method of recovering rubber from Cryptostegia in Haiti is based on hand tapping the living plant and coagulating the rubber from the exuded latex. Due to the large amount of work involved in such an operation, production is necessarily limited to areas where an adequate supply of suitable labor is available. Methods are needed for the recovery of rubber from Cryptostegia leaves which contain 5 to 6 percent rubber and from which it is estimated that about one hundred pounds of rubber per acre could be obtained annually if suitable recovery procedures could be developed.

The effect of the present method of tapping upon the plants is not fully known, nor is there complete information as to the regeneration of tappable leaders to replace those cut back by the tapping operations. Further information is needed as to cultural practices to assure the continued production of rubber by this hand-tapping method.

For use in areas where labor supplies and costs are not so favorable as those in Haiti, mechanical methods of obtaining the latex or cheaper tapping methods are needed. On theoretical grounds, more rubber could be produced by cutting the plants and extracting the rubber from the leaves and stems than by tapping operations. However, no practicable method of extracting rubber from leaves and stems of Cryptostegia has yet been developed. The Bureau of Agricultural and Industrial Chemistry is now studying this problem.

Plan of Work: In view of the possibility of such a development, it is necessary that the growth and development of the plant in relation to total production of rubber rather than only from the standpoint of production of rubber by tapping leaders be studied.

Intensified effort will be directed to that portion of the program having to do with those phases of Cryptostegia culture directly associated with actual rubber production. This will involve a realignment of emphasis, with less effort being directed toward solving problems of propagation and selection. The problem of actual rubber production will be studied in the field at Coconut Grove, Florida, and Bard, California, and in the laboratory and greenhouse at Beltsville, Maryland. Methods of obtaining rubber from Cryptostegia may be divided into two general classifications: (a) bleeding the living plants to obtain the latex, and (b) mechanical or chemical extraction of rubber from harvested plants. To determine the feasibility of (a) the studies at Coconut Grove, Florida, and Bard, California, will be closely coordinated with work being conducted at Ciudad Victoria, Tamaulipas, Mexico, and in Haiti, both by correspondence and by official visits. There already is indicated that new information as to tapping sequence may alter and cheapen the process of bleeding Cryptostegia. To determine the feasibility of (b) above, close cooperation will be maintained between the field studies and extraction tests to be conducted at Philadelphia by the Bureau of Agricultural and Industrial Chemistry. Field studies will involve the determination of optimum spacing for maximum production of leaves, stems, and total rubber; determination of best time of year for harvest; and comparison of leaf stripping, clipping, and total harvest of plants on total rubber yield.

The recovery of rubber from plant material is in general limited to either solvent extraction or the use of mechanical milling techniques. In the case of Cryptostegia, it was found that both methods failed to recover more than a small fraction of the total rubber present in the leaves. This failure was explained by microscopic studies which revealed that about 90 percent of the leaf rubber occurs in individual chlorenchyma cells rather than ducts and is so encased in palnt tissue that the usual methods of rubber recovery are ineffective. Further investigations have resulted in

the development of methods for the release of the cell rubber indicating at least three possible procedures for rubber recovery: (1) chemical pretreatment followed by solvent extraction, (2) retting by microorganisms followed by solvent extraction, and (3) alkaline digestion of retted plant material and separation of the cell rubber suspension by centrifuging and other mechanical means.

In addition to further laboratory investigations thus indicated, the three possible methods above will be studied on pilot plant scale at the Eastern Regional Research Laboratory to evaluate their commercial feasibility for the production of an acceptable grade of rubber.

CHANGE IN LANGUAGE

The estimates include proposed changes in the language of this item as follows (new language underscored, deleted matter enclosed with brackets):

For all expenses necessary to enable the Secretary to carry into effect the Act of March 5, 1942, as amended ([56 Stat. 126-128, 796-797] 7 U. S. C. 171-175), including personal services in the District of Columbia and elsewhere; printing and binding without regard to section 11 of the Act of March 1, 1919 (44 U. S. C. 111); purchase of books of reference and periodicals; purchase of passenger-carrying vehicles; erection of necessary buildings; procurement of medical supplies or services for emergency use in the field; and the acceptance of donations of land and rubber-bearing plants, and furnishing to employees daily transportation between points of assembly and work projects, [$13,048,000] there is hereby continued available, in accordance with section 3 of said Act of March 5, 1942, not to exceed $5,420,000 of the unobligated balances of appropriations made under this head for the fiscal years 1942 and 1943, which balances shall be merged with the appropriation made under this head in the Department of Agriculture Appropriation Act, 1944: Provided, That any proceeds from the sales of guayule, rubber processed from guayule, or other rubber-bearing plants, or from other sales, rentals, and fees resulting from operations under such Act of March 5, 1942, as amended shall be covered into the Treasury as miscellaneous receipts.

On October 26, 1943 the Comptroller General of the United States in decision B-37398 held that the $13,048,000 appropriated for the Emergency Rubber Project in the 1944 Agricultural Appropriation Act was permanently available without regard to the provision of any other laws relating to the availability of appropriated funds. This decision was based on Section 3 of the Act of March 5, 1942 (7 U. S. C. 173) authorizing appropriations for this program, which reads as follows:

> "There are authorized to be appropriated such amounts as may be necessary to carry out the provisions of this Act. Any amounts so appropriated, and any funds received by the Secretary under this Act, shall remain permanently available for the purposes of that Act without regard to the availability and disposition of appropriated funds and the disposition of funds collected by officers or agencies of the United States."

In view of the Comptroller General's decision, the Solicitor of the Department of Agriculture was asked for his opinion as to whether funds appropriated for the Emergency Rubber Project for the fiscal years 1942 and 1943 were likewise permanently available. The Solicitor held that because of restricting language contained in the appropriation items for those years, availability of such funds was limited to the fiscal years for which they were appropriated.

However, unobligated balances of funds appropriated for the fiscal years 1942 and 1943 aggregate $7,809,363--more than enough to cover the estimate of $5,420,000 for the fiscal year 1945. Therefore, it is recommended that the appropriation language be changed as proposed above so as to make available for the fiscal year 1945 $5,420,000 of the unobligated balances of the appropriations made under this head for the fiscal years 1942 and 1943. Approval of this recommendation would make it unnecessary to appropriate new funds for the fiscal year 1945, and would be in keeping with the provisions of the Act of March 5, 1942, cited above.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$266,959	$549,229	$228,866
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	- -
Total cost of overtime (7 months in 1943)	266,959	549,229	228,866

WORK UNDER THIS APPROPRIATION

The Emergency Rubber Project is a joint operation with funds alloted and transferred to various bureaus and offices as indicated in the following statement:

Bureau	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
Forest Service	$19,270,742	$11,733,895	$4,894,990	-$6,838,905
Bureau of Plant Industry, Soils, and Agricultural Engineering	398,021	792,785	324,010	-468,775
Bureau of Agricultural and Industrial Chemistry	366,900	451,900	150,000	-301,900
Bureau of Entomology and Plant Quarantine	8,913	26,420	26,000	-420
Transferred to:				
Office of Solicitor, Department of Agriculture	12,000	25,000	25,000	- -
Procurement Division, Treasury Department	2,625	18,000	- -	-18,000
Total obligations	20,059,201	13,048,000	5,420,000	-7,628,000

Progress and Current Program:

Guayule

Harvesting and rubber production: Shrub from a 550-acre field of 13-year old cultivated guayule has been milled, yielding approximately 393 long tons of rubber, an average of 1600 pounds per acre. Rubber extraction based on dry weight of the shrub was 18.96 percent. The rubber was sold to the Rubber Reserve Company for 27¢ a pound F.O.B. Salinas, California, total value $236,574. Milling of a small supply of wild shrub harvested in Texas, now under way, will be completed probably in February 1944. Some 150 to 200 tons of rubber will be recovered from this operation.

Improved lifting plows for harvesting cultivated shrub have been developed, and development of an efficient baling machine is under way.

Planting: A total of approximately 60,000 acres of land was leased for planting by March 1943. No land for plantations has been leased since that date. To minimize interference with essential food production in accordance with the views of the Rubber Director, 28,000 acres have been returned or subleased to farmers; on the remainder, approximately 32,000 acres, planting was virtually completed by December 31, 1943. Seventy percent of the acreage is under irrigation, thirty percent is unirrigated. Except for small-scale plantings primarily of experimental value, all plantings are in California.

Three types of planting machines have been tested and modifications have been made to improve each. The increase by at least 2½ percent in the number of well planted plants was recently achieved by two simple changes in the feeding mechanism of one type of planting machine. In the fall of 1943 the size of planting crews was reduced from 14 to 10 persons without loss of planting efficiency as a result of job analysis and training.

Nurseries: Thirteen nursery units with overhead irrigation systems have been established; ten in California, one each in Texas, New Mexico, and Arizona. These nurseries contained a total of about 44,000 standard nursery beds of 1600 square feet each. The capacities of all nurseries expressed in terms of annual field planting are 67,000 or more acres, depending upon the number of plants set out per acre. About 400,000,000 seedlings have been transplanted. About 570,000,000 seedlings remain in 27,500 nursery beds. Some of these will be sold if possible. It is planned to hold the best of the remainder for milling in 1944 and 1945. Action to dispose of nursery sites and facilities not in use is under way.

The development of weed control by spraying with oil in both nurseries and plantations has decreased greatly the labor requirements of this job, as has an improved nursery cultivator. The peak labor requirements for weeding the Salinas nurseries in 1942 was about 3,000; in 1943 it was about 200. It is believed that nursery stock can now be grown without the use of overhead irrigation systems, the elimination of which would decrease nursery installation costs $800 to $1000 per acre.

Seed: The seed crop from the 1942 harvest was 108,500 pounds. About 225,000 pounds cleaned weight will be stored from the 1943 crop. Seed has been made available to foreign countries for experimental work, and to a commercial company in Mexico under cooperative agreement for cultivation purposes. Large-scale seed-treating equipment has been designed and installed at central points. Much-improved seed harvesters for both nursery and plantation seed collection have been constructed.

Labor housing facilities: Eighteen labor camps having a worker capacity of 8500 persons have been erected in California. Many of these have been subleased when not needed for guayule activities, to various organizations engaged in food production or other war activities. Those not required for the fiscal year 1945 program will be released permanently for other use.

Soil surveys: General reconnaissance surveys and broad classification of soil types have been made over a large part of the area throughout the Southwest generally favorable to guayule. Detailed surveys have been made of all individual tracts leased to determine their relative suitability for use as a basis for leasing and planning production. Field work for soil and climatic surveys will be completed in fiscal year 1944.

Plant research: Guayule research activities are designed mainly to solve current problems of the production program and also to contribute more fundamental knowledge regarding the plant and its culture. The latter objective looks forward toward improving the plant for breeding, yield and also toward improving and simplifying production practices, all of which would make for more stable and more economical production of this crop.

Eighty-three indicator plots of 1-acre or less were established in 1942 and fifty-five additional in the spring of 1943. These extend from northern California to southern Texas. Their purpose is to test the adaptability of guayule to the various soils, climates and other conditions in this range of territory. In general, they show that guayule responds more favorably in growth and yield of rubber to the warmer climates than in the Salinas Valley in California. These plantings also show that in general existing varieties of guayule are not tolerant to cold, serious injury occuring at temperatures from 0 to 6° F.

Nine experimental plantings of 40 acres or more have been made in the more promising areas for guayule culture in California, Arizona, New Mexico, and Texas. The purpose is to determine the best spacing, seasons and methods of planting, cultivating, fertilizing, irrigation and weed control, all looking toward more efficient and more economical field production. The outstanding result of these studies to date is the progress made toward direct field seeding. A field trial of 100 acres was established in 1943. Direct seeding would eliminate all nurseries with their expensive installations and the labor required in handling, transporting and transplanting the planting stock, would speed up the time of production, and should reduce costs.

Studies of soils to determine the soil fertility and moisture requirements for maximum growth and rubber formation indicate well-drained lands of fair fertility and moisture supply, together with reasonable care after planting, would seem to be required if guayule is to yield best returns. Contrary to popular belief, irrigation water properly applied has increased the yield of rubber per acre in young shrub, as compared with rubber production from shrub of the same age growing on unirrigated land.

Organisms causing diseases have been isolated and identified, and control measures developed for most of them.

All existing varieties of guayule are being extensively tested throughout its range in field plantings. Extensive seed collections have been made from wild plants in the Big Bend area of Texas and in the various states of Mexico. Results to date indicate that some of the wild plants have important characteristics not present in the cultivated varieties.

Investigations on growth and development of rubber have been designed to solve not only practical production problems but more fundamental questions concerned with the physiology of the plant's development and the formation of rubber and resins. Laboratory tests on seed have shown that guayule germinates well only in temperatures between 60° and 80° F., a rather narrow range as compared with farm crops generally. This information serves as a guide as to the season when sowing should be done in different areas. Methods of root cuttings have been determined. This method of propagation can serve as a rapid means of increasing any superior selection so that large seed supplies can be obtained quickly. Studies indicate that guayule is very tolerant of boron. This is important in land and water utilization as much soil and irrigation water in the Southwest are unsuited to many crops because of the existing content of boron.

Studies of methods of packaging, storage and transportation of nursery stock have been of material aid to the planting program in keeping stock in good condition and assuring a good stand in the field.

A good beginning has been made toward an understanding of the biochemical process within the plant, concerned with the formation of rubber and related hydrocarbons. Studies are under way also on the effect of external conditions on the rate of rubber development and total content of rubber, such as heat and cold, days' length, nutrition, drought and competition. Results to date indicate that little rubber is formed during periods of active growth and seed production. Studies indicate that apparently it is possible to grow the shrub quickly to a large size and then slow down growth by proper manipulation of cultural treatment to encourage rubber storage.

Processing research: The immature two- and three-year old guayule shrub which will be harvested in the present program presents difficulties in processing to obtain good rubber, due principally to low rubber content, high resin content, and abundant foilage. Certain modifications and simplification in procedure compared with the conventional process for recovering rubber from old guayule have been developed with a view in part toward increasing the annual milling season to full 12 months annually.

Defoliation of the shrub after harvesting permits the removal of approximately 25 percent of the weight of the plant. Defoliation has the following benefits.

a. Removes dirt and shrub fractions high in resins, copper and manganese.
b. Decreases space required for shrub storage.
c. Decreases pebble milling capacity required per unit of rubber produced.
d. Increases over-all yield of rubber from shrub.
e. Reduces benzol insoluble fractions in the finished rubber.

Relatively inexpensive rotary-knife cutters have been found to be satisfactory substitutes for the customary train of three pairs of massive crushing rolls. There is experimental evidence that attrition mills may be substituted in part for pebble mills for processing the guayule slurry. This would greatly reduce the factory space required and eliminate the high depreciation characteristic of pebble mills.

It has been demonstrated that fermentation of shrub produces on pebble milling a firmer rubber with lower resin content and improved tensile property compared with that from the unretted shrub.

It has been demonstrated that the use of small amounts of caustic in the water employed for the purification of guayule worms resulted in rubber of an improved tensile strength through reduction in the benzol insoluble fractions.

It has been demonstrated experimentally that guayule rubber can probably be dried in a continuous through-circulation apron drier at atmospheric pressures, thereby eliminating the conventional expensive batch vacuum drying operation.

Because of seasonal changes in rubber content of guayule, it is desirable to harvest irrigated shrub only during the winter and early spring. Storage of the harvested shrub would be necessary to permit continuous factory operations. Experiments have been set up on the storage under different conditions or different varieties of shrub of various moisture contents.

It has been demonstrated on a small scale that latex can be isolated from fresh shrub, using reagents to prevent coagulation of the rubber. The product from these small scale experiments has the appearance of pale crepe and has a very high tensile strength.

Pilot plant facilities are now assembled at Salinas, California, where processing research will be accomplished in the future. Previously, work along these lines had been conducted at Philadelphia at the Eastern Regional Research Laboratory.

Protection from insects: Several important insect problems were encountered and in most cases very satisfactory control measures have been devised. This is in a measure due to the excellent cooperation obtained from state and federal entomologists in giving their advice and experience; thus in most cases obviating long-time experiments.

Guayule in Latin America:

Mexico: Field test plantings have been established in cooperation with the Department of Agriculture of Mexico and private organizations at several irrigated localities in Coahuila, and in the unirrigated grasslands of Durango. At least one guayule operator appears to be planning definitely to undertake a substantial cultivation program. At present all guayule produced in Mexico is obtained from wild shrub.

Surveys to locate potential planting areas have been made in north central Mexico and in Baja, California.

Argentina: The Argentine Government has been assisted in establishing several very small nurseries. Flood irrigation is successfully used. Extensive areas suitable for guayule have been located and recommendations concerning specific areas for field plantings have been made. About 2½ million seedlings are reported to be available in Argentina for transplanting.

Chile: Nurseries have been established with flood irrigation and transplanting has been very successful. It has been possible to demonstrate that appreciable areas exist where general conditions are favorable for guayule.

Kok-saghyz

Kok-saghyz can be grown on large scale on several soils over a wide range of climatic conditions. Harvest in the fall of 1943 and spring of 1944 will give preliminary information on yield of seed, roots and rubber per acre with additional data on various dates of sowing, distances between rows, densities of plants within the row and under various cultural methods. With the exception of one field, all work was performed by Government crews operating Government equipment. In one case a truck farmer's land, tools, labor and supervision was contracted for, to provide preliminary data for future consideration of farmer contract-growing.

Soil surveys: Kok-saghyz requires a good mineral soil, high in organic content, or a well subdued peat soil. Heavy soils, poorly drained areas, or those excessively stony or fields with slopes over 5 percent have proved undesirable. Kok-saghyz requires an unusually well-prepared seed bed.

Interpretation of results reported by the U.S.S.R. and observation of experimental plantings in this country gave opportunity to group soil types of the U.S. in accordance with their suitability. Additional soils not previously investigated have been selected for future experimental plantings. Tentative generalized maps showing large areas having suitable soils have been prepared. Such areas are found across the northern tier of States with the largest concentrations located in Michigan, Wisconsin, and Minnesota.

Preliminary estimates show that possibly eight million acres of lands adaptable to kok-saghyz culture exist in the United States. Generally such soils would be cropped to corn, small grains with a much smaller percentage in root crops. Work on the nutrient requirements is only partially completed.

Seeding: Seven hundred and fifty-one acres of kok-saghyz were seeded in planting centers established in Oregon, Montana, Minnesota, Wisconsin, Michigan, New York, and Vermont, about 80 percent of this acreage being in the Lake States. A small acreage of 1942 test plantings was carried over winter to test survival and second year root and seed production.

Despite an extra-ordinarily wet and cold 1943 spring, reasonably good stands were established on 400 to 500 acres. Although good growing conditions have prevailed since June 15, this year's results will not indicate what might ordinarily be expected as germination and early growth was exceptionally slow.

Cultivation, weeding and rogueing: Kok-saghyz germinates, emerges, and grows very slowly for two months, requiring careful cultivation and hand weeding. Standard tractor cultivating equipment as adapted to kok-saghyz culture has proved satisfactory. Early season weed control promises increased root yields. Pre-emergence cultivation resulted in lowered weeding costs as does careful preparation of fields before sowing. Indications are that weeding costs could be cut by 50 percent.

Practical instructions have been developed so that common labor can recognize rogue and low rubber-bearing dandelions and remove them before seed is collected. Complete elimination of low rubber bearing plants from plantations would aid in producing a seed supply free from rogue seeds with a resultant lower seed production cost.

Seed production and collection: Second year plants from a very few indicator plantings established in 1942 produced from five to six times the yield per acre as in their first year. The mountain valleys near Missoula, Montana have proven most successful for seed production. Here the 1942 average was 14 pounds per acre, but one acre held for the second year produced 150 pounds in 1943. As seed production would have been the bottleneck to extensive planting, it is of great importance to have learned the correct location for producing high-grade seed. The maximum seed producing capacity of Montana valleys has not been determined.

Equipment development: Four, six, and eight row seeders of standard design, flexibly mounted on standard farm tractors, can be utilized. A self-propelled four-row seed collector has been developed and was used on 90 percent of the 1943 fields. Check tests indicate 16 pounds of seed collected per acre by hand and 12 pounds by machine, eliminating what is estimated by the U.S.S.R. as five to six people per acre per day during the entire seed producing season. Seventy-five percent of the available seed on twelve acres can be collected by one machine every day using only one operator. It is believed that improvements can be incorporated into the presently developed machine to better appreciably its performance.

No special cultivating equipment has been found necessary.

No standard equipment was adaptable to the topping of kok-saghyz. Four-row tractor toppers were developed but did not prove adequate, cutting off too much of the rubber-bearing root crown. Some improvement can be made in gauging the depth at which the cutter blades operate.

Modifications and adaptation of existing root harvesting equipment has not proved satisfactory, only fifty to sixty-five percent of the roots being recovered. A completely new design, embodying principles already proven workable, will be necessary.

While seeding, seed collecting and cultivating equipment development is well along, the development of auxiliary weeding equipment is yet to be undertaken. Improvement of root topping, lifting, and harvesting equipment to greatly lower costs would require additional work. Root drying in 1943 was done in existing empty buildings utilizing makeshift equipment and methods. More field drying is necessary and properly designed and constructed drying sheds of low cost are desirable. Experimental work has been initiated to develop a better drying method.

Harvest and rubber yields: Indications are that one year roots will yield at the rate of about two tons per acre, green weight. Root development and rubber percentage increase rapidly during the fall months. In Minnesota, roots harvested late the first spring after seeding (12 months old) show a rubber content almost twice that of those harvested the first fall. Roots harvested in the fall of 1942 from seed sown the previous spring averaged about four percent rubber and roots from the same fields carried to May and June, 1943, averaged over eight percent, both averages based on the dry weight of the roots.

Contrary to expectations, small scale indicator plantings in the extreme South of the United States in 1942-43 show that there is every liklihood that root and possibly seed crops can be matured between October and May. Small field scale test plantings now under way in Florida, Mississippi, and the Southwest will give the opportunity to determine whether two crops, one North and one South can be grown annually offering rapid expansion possibilities.

Plant research: Indicator plantings to determine soil and climatic adaptability have been carried on in forty-two States, Canada and Alaska. Increase of plant stocks and seed supplies of selected strains is under way. These selected strains contain more than four times as much rubber and seed as the average unselected plants. Related species of dandelions have been distributed to cooperators with the hope that hybridization may produce a more vigorous dandelion with an appreciably higher rubber content. Studies of seed dormancy and control to insure uniform and rapid seed germination have been made. All research and experimentation have been directed to solving problems which would reduce costs and increase rubber yields.

No serious disease problems have developed but careful check on sporadically appearing diseases is being made to forestall if possible developments of any epidemics. No particular damage to fields were occasioned by insects in 1943.

Processing research: A comparatively simple laboratory method for the recovery of rubber from kok-saghyz has been developed, producing a rubber of very high quality closely comparable with Heavea rubber. Equipment to carry on a continuous pilot plant operation is installed at the Eastern Region Research Laboratory, to test the recovery methods previously worked out in the laboratory and to produce rubber in sufficient quantity for commercial testing. Methods of handling green and dried roots to provide for yearlong plant operation are under study but not yet fully developed. To eliminate the now necessary careful topping of the kok-saghyz roots as a field requirement, if crop growing should ever be contracted with farmers, additional processing methods must be worked out and equipment designed, because the presence of rather large amounts of pectin in the kok-saghyz leaves complicates the rubber recovery process as presently developed.

Inulin, a source of alcohol, can be quantatively recovered by leaching the roots prior to rubber recovery. The value of this by-product more than offsets the cost of rubber extraction.

Goldenrod

Practical scale growing of goldenrod on more than 600 acres in cooperation with farmers over a rather wide range of soils in Georgia has been demonstrated in 1943. Farmers furnished and prepared the land and cultivated and weeded the crop at an agreed price per acre, using their own labor, power and farm equipment. The 1943 harvest has provided a measurement of first year yield of green leaf, dry leaf, and rubber production per acre for at least five strains of goldenrod on some fifty or more soils involving such factors as different degrees of spacing, time of planting, character of planting materials, and culture. As of January 1, 1944 analysis of data from harvesting operations was not completed.

Goldenrod plantations, once established can be harvested for two or three years, with very little annual care. How long such fields can be carried before replanting is required, is not yet determined.

Soil surveys: Goldenrod soil requirements are the equivalent of fair to good cotton land. Soils on which goldenrod has been growing have been studied and tentatively grouped according to their suitability. By analysis of this data, other soil types throughout the Southeast have been tentatively grouped and generalized maps have been prepared to indicate suitable areas for further experimental plantings. Such areas are found in South Carolina, Georgia, Florida, Alabama, Mississippi, and Louisiana, and possibly Texas. Sites for further indicator plantings have been selected to develop more precise information as to the exact soils to which goldenrod is adapted and to obtain data on the climate and cultural practices that should be used.

Preliminary estimates show that possibly twelve to fifteen million acres of land in the South are suitable for goldenrod culture. At present these soils generally are cropped to cotton and corn.

Plantings: In the spring of 1943, 570 acres of goldenrod were planted near Waynesboro, Burke County, Georgia. At Savannah, 60 acres of new plantings were put in and one four-acre field of 1942 plantings was carried over to produce a second year leaf crop. Small indicator plantings to test soils and climate considered desirable were made in cooperation with state and federal experiment stations in a number of states in the South and at federal stations in Mexico and Central America.

Based on past work the four most productive strains of goldenrod were used. In order to utilize existing cotton and corn cultivating equipment, plantings were made in rows 40 to 42 inches apart, resulting in stands too open to fully utilize the producing capacities of the soil and permitting heavy week growth. Densities of 5,000 to 17,000 plants per acre are represented in this year's plantations. Reproduction of goldenrod is vegetative, utilizing the vigorous underground stolen portions of the plant for new planting material. Generally, 1943 spring plantings were made too late to take full advantage of the growing season. The earlier plantings gave distinctly better results. There remains a wide field for further experimental work in the method, time, and density of planting to increase yields and lower costs.

Cultivation and weeding: Cultivation and weeding on the 1943 plantations was performed by field hands from the farms where goldenrod acreage was contracted. Standard cultivating and power equipment was furnished by the farmers on a contract basis. Several cultivations and at least one hoeing are required to lay the crop by.

It now seems possible that some of the expense of growing goldenrod can be reduced by handling goldenrod more as a winter cover or forage crop than as a row crop. Small scale experimental work along this line has been initiated but is incomplete. Development of methods which will reduce cultivation costs is the immediate objective. The combination of early or fall plantings with the development of means of drilling stolon cuttings in closely spaced rows may give goldenrod a competitive advantage over weeds not possible under row cultivation, while at the same time, it will increase yields and reduce costs.

Production of planting material: One year stands of goldenrod grown under adverse conditions in 1942 gave ten to twenty-fold increase in propagating material for planting new fields. From fields planted in 1937 and harvested in a normal season, 1941, increases of more than one hundred-fold in planting material were obtained. Additional data on yields of stolon planting material will be obtainable early in 1944. The application in the late summer of small quantities of commercial fertilizer gave evidence of producing increased stolon growth. Definite information as to the safe rate of increase on which a goldenrod program could be expanded will not be completely available from a one-year program.

The most promising method of propagating goldenrod at present is by stolon shoots which require transplanting. However, there is a possibility that by the use of growth-stimulating treatments followed by refrigeration, short stolon cuttings may be made to approximate seed more closely in size and germinative power. If this possibility can be realized, drilling or even broadcasting of these short stolon cuttings may make it possible to eliminate the expensive process of transplanting. Experimental work on this possibility has been initiated.

Equipment development: Work on goldenrod equipment has centered around the development of machinery for planting, harvesting, deleafing, and drying the plant. Manual and semi-automatic two row transplanters were used on 1943 plantations and a one-row planter for placing short stolon cuttings in a random position in the furrow was built and is being tried out. However, data obtained from work done in F. Y. 1944 will not be sufficient to be conclusive. Standard corn and rice harvesting equipment has been adapted for the goldenrod harvest. It is believed that with modifications now recommended such harvesting equipment will be satisfactory.

It was planned to remove the leaves from the green goldenrod plants by a deleafing device. Because of the branching habit of widely spaced first-year plants and the heavy proportion of bloom, this equipment has not proved satisfactory. A number of different methods of separation of leaf material from stems and bloom were employed during the 1943 harvest, but adequate equipment and techniques have not yet been developed. A kiln-type dryer with predrying sheds has been installed. Quick, high-temperature drying on a continuous scale has been tested by a commercial manufacturer. Determination of the effect of high temperatures used in flash drying on the quality of the rubber extracted from the leaves has not been completed. Retting tanks are installed to reduce the volume of the leaf material to be handled by the rubber processing plant.

Probably the greatest opportunity to reduce goldenrod production costs exists in the further development of labor saving field and drying equipment.

Harvest and rubber yields: In 1943 early spring tests of wild goldenrod growth showed practically the same rubber content as from the fall, 1942 harvest. Sample spring harvestings from 1943 plantings as late as July 1 gave rise to new growth large enough for a second harvest in October, pointing to the possibility of obtaining higher rubber yields per acre through double harvesting, annually. Sample 1943 harvestings from July 1 to October 1 showed an increase from 300 pounds to 600 pounds weight of dry leaves per acre and an increase in rubber content from 3.4% to 7.5% of dry leaf weight. Since in past years at the time of normal harvest in October and November the average percentage of rubber has been approximately six percent, it would seem reasonable to assume a comparable percentage from at least 2,000 pounds of green leaves (700 to 800 pounds of dry leaves) per acre at time of harvest, forecasting a yield of 40 to 50 pounds of rubber per acre from first year plantings. On July 15, 1943, for a poorly stocked 1942 stand which was carried over for second year tests, an estimate of two tons per acre green weight was made, forecasting second year yields of 75 to 90 pounds of rubber per acre.

The development of improved strains of goldenrod and the improvement of the method of propagation, fertilization, cultivation, and harvesting of the crop have been the immediate aim of plant research on this project. Studies, undertaken in 1943, but requiring more experience to verify the indicated findings, would assist in increasing yields and reducing costs in line with cultural practices which can be adapted to the agriculture of the areas in which the crop may be grown. Further study of the nature of the formation of rubber

within the plant may point to means of accelerating its formation. The relation of rubber globules to the plant tissues may supply leads of definite help. A detailed study to determine causes of leaf shedding, including such factors as normal aging, shading and nutrient deficiencies, is initiated but incomplete.

How to overcome losses from Southern Blight present in some fields, would involve further tests of production following various other crops which are not favorable hosts. Frequent inspections disclose no particular damage by insects in 1943.

Processing research: Based on 1942 laboratory scale experiments, pilot plant methods for the extraction of rubber with benzene have been developed.

By adding to the goldenrod rubber certain antioxidants and accelerators in conjunction with the precuring process, vulcanizates having tensile strengths of about 3000 pounds per square inch have been produced. Gum-stocks and carbon-black tread-stocks have been prepared and vulcanized to give maximum tensile strength up to 3,500 pounds per square inch. Tests reported by three major rubber companies show that raw rubber from goldenrod can be blended with GR-S synthetic rubber with desirable results in that building tack and elongation are increased and absolute hysteresis is reduced.

Equipment for an eight-cell pilot plant is installed and is being operated to meet the following objectives: (1) Production of the maximum amount of rubber from this year's crop for evaluation by laboratories and commercial concerns; (2) determination of production costs; (3) evaluation of rubber drying procedures; (4) evaluation of sample harvesting, retting, and ensiling experiments. Methods of improving the quality of goldenrod rubber, and studies as to the blending of goldenrod with synthetic rubber are incomplete as of January 1, 1944. Only incomplete cost data will be available.

Surveys of existing pine stump extraction plants in the South indicate that without great changes and additions, capacity could be provided to process the crop from one to one and one-half million acres of goldenrod. To do this, however, would mean stoppage of the production of turpentine, pine oil, and rosin in these plants.

Cryptostegia

Growth studies: Studies have been made of methods of establishing plantings of Cryptostegia, including direct seeding in the field, establishment of nurseries, time and methods of transplanting, and the establishment of special strains by vegetative means. Under favorable conditions, field plantings can be established successfully by direct seeding. However, unless all conditions of moisture and depth of seeding can be controlled, much replanting is necessary and ordinarily transplanting from nurseries is preferable. Vegetative propagation has been found most useful with special strains, and it has been found possible to propagate vegetatively either by cuttings or by bud grafting.

Tipping tests: The problem of obtaining rubber from Cryptostegia plants may be divided into two parts: (1) the entire plant may be harvested and the rubber extracted from the leaves and stems by mechanical or chemical methods, (2) the rubber may be obtained by methods of bleeding the tips. This latter method is referred to as "tipping" and tests are being conducted in Florida and California. In tipping the plants, the stems can be bent over and bled into small containers. This requires the expenditure of a large amount of hand labor and is not considered suitable for use in the United States. A method has been developed in Florida by which a sled device is placed underneath the bush and a number of branches quickly tipped, the latex being allowed to drip into the sled. Experiments with this device are being continued to determine if satisfactory yields can be secured.

Development of superior strains: The two species of Cryptostegia (C. grandiflora and C. madagascariensis) and hybrid types are being compared. A large second-generation population of an interspecific hybrid is being studied and several thrifty-growing, high rubber content plants have been selected for further tests. Studies are being made of artificial methods of producing hybrids.

Pilot laboratory investigations: In the Cryptostegia plant about one-quarter of the rubber is in the stems and three-quarters in the leaves. About 90% of the leaf rubber is in individual chlorenchyma cells and is so thoroughly encased in plant tissue and protoplasm that it is practically impossible to separate it. All rubber recovery methods known to us, and many new combinations, have been tried, but we have been unable to obtain good yields of rubber of commercial quality.

Miscroscopical study showed the encasement to resist all ordinary chemical treatments except strong sulfuric acid. The best attacks were by means of anaerobic fermentations with two species of Clostridia; these destroyed (as shown by microscopical examination) the walls of the rubber-bearing leaf cells and the intercellular pectin, as well as most of the protoplasm surrounding the rubber globules. However, no satisfactory method of mechanical recovery of this rubber has been found.

By benzene extraction of dried, ground Cryptostegia leaves 80-90% of their rubber has been obtained, but the product is of poor quality and the process expensive. The leaves are first boiled with an oxolate to remove pectin, then treated with hot 95% ethyl alcohol containing sodium hydroxide, which removes most of the resin. An antioxidant is used with the benzene and part of the compounding materials is added during evaporation of the extract. The rubber thus secured has a tensile strength about 30% that of hevea; its hardness is 80, and its ultimate elongation 500%. It contains about 80% pure rubber.

Pebble milling, even extremely prolonged, was unsuccessful in obtaining a commercial grade of rubber from either leaves or stems; the product was

a mixture of plant tissue, resin and rubber, about one-third each. Neither retting nor hot caustic and acid treatment of the leaves prior to milling materially increased the yields. Enzyme action during pebble milling, to break down the cell walls and release the rubber particles, did not help appreciably.

Attempts to obtain latex in quantity from harvested leaves and stems by leaching, by bleeding, by high-pressure roll mills, and by pebble milling with anticoagulants, gave impure, dilute latexes containing less than 20% of the rubber in the plant.

Further laboratory and pilot plant scale study is necessary to establish a feasible procedure for rubber recovery from harvested Cryptostegia.

STATEMENT ON PASSENGER-CARRYING VEHICLES

No new passenger-carrying vehicles will be purchased in fiscal year 1945. Fifty old vehicles will be in use, requiring an estimated expenditure of approximately $200 each for maintenance, repair, and operation.

SALARIES AND EXPENSES, WAR FOOD ADMINISTRATION

Appropriation Act, 1944	$25,000,000
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+ 1,906,020
Total anticipated available, 1944	26,906,020
Budget Estimate, 1945	30,000,000
Increase	+3,093,980

DISTRIBUTION OF FUNDS

Organization	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
Allotted to -				
Food Distribution Administration	$2,325,182	$11,595,443	$13,100,000	+$1,504,557
Extension Service	- -	2,035,000	4,070,000	+ 2,035,000
Office of Materials and Facilities	367,353	1,194,028	1,120,000	- 74,028
Office of Director of Food Production	137,980	228,061	425,000	+ 196,939
Office of Labor	- -	426,812	850,000	+ 423,188
Office of War Food Administrator	35,000	308,484	250,000	- 58,484
Unallotted balance for special war food projects	- -	643,006	- -	- 643,006
Transferred to -				
Agricultural Adjustment Agency:				
Administrative expenses	- -	1,500,000	1,500,000	- -
County association expenses	1,500,000	8,089,000	7,689,000	- 400,000
Office of the Secretary (Budget and Finance, Personnel, and General Operations)	8,400	154,992	126,000	- 28,992
Office of the Solicitor	8,500	193,844	240,000	+ 46,156
Office of Information:				
Salaries and expenses	27,000	217,500	240,000	+ 22,500
Printing and binding	- -	30,000	85,000	+ 55,000
Bureau of Agricultural Economics:				
Economic investigations	18,362	114,250	130,000	+ 15,750
Crop and livestock estimates	- -	175,600	175,000	- 600
Total available	4,427,777	26,906,020	30,000,000	+ 3,093,980(1)

Organization	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
Received by transfer from:				
"Salaries and expenses, War Production Board"	- 681,550	- -	- -	
"Salaries and expenses, Office of Community War Services, Federal Security Agency"	- 407,727	- -	- -	
"Emergency fund for the President, National defense"	-2,856,500	- -	- -	
Anticipated deficiency for overtime	- -	- 1,906,020	- -	
Total estimate or appropriation	a/ 482,000	25,000,000	30,000,000	

a/ Appropriated under heading "Salaries and expenses, Office for Agricultural War Relations".

INCREASES AND DECREASES

(1) A net increase of $3,093,980, in this appropriation, distributed by organizations as indicated above, is due principally to the necessity of financing on a full-year basis in 1945 certain war food programs which (a) were financed from this appropriation beginning late in the current fiscal year, or (b) involve a cumulative work load as food production orders, food distribution orders, etc. increase. Explanations of the separate increases and decreases as well as descriptions of the work performed which these funds are included in the notes covering the various agencies to which allotments or transfers are made.

CHANGES IN LANGUAGE

The estimates include proposed changes in language as follows (new language underscored, deleted matter inclosed with brackets):

> Salaries and expenses: For expenses necessary to enable the War Food Administration to perform its functions, including those prescribed by Executive Orders 9280, 9310, 9322, 9328, and 9334, independently or in cooperation (by transfer of funds or otherwise) with public and private agencies and individuals, including not to exceed $10,000 per annum for an Administrator, other personal services in the District of Columbia and elsewhere in accordance with the provisions of law applicable to the appointment and compensation of persons employed by the Agricultural Adjustment Agency, including not to exceed $50,000 for the temporary employment of persons or organizations by contract or otherwise without regard to [the Classification Act of 1923, as amended]

civil-service and classification laws, actual transportation and other necessary expenses, and not to exceed $10 per diem in lieu of subsistence, of persons serving while away from their permanent homes or regular places of business in an advisory capacity to or employed by the War Food Administration without other compensation from the United States; upon authorization or approval of the War Food Administrator, travel expenses to and from their homes or regular places of business in accordance with the Standardized Government Travel Regulations, including travel in privately owned automobiles, of persons employed intermittently away from their homes or regular places of business as consultants and receiving compensation on a per diem when actually employed basis; printing and binding; the purchase of law books, books of reference, periodicals, and newspapers; and the purchase, operation, and maintenance (including two in the District of Columbia) of passenger-carrying vehicles; [$25,000,000] $30,000,000: Provided, That [transfers of funds to other offices or administrative units in the Department with respect to which transfers of funds are otherwise authorized in this Act shall be in addition to, and subject to the same restrictions as, the amounts provided therefor in the Budget schedules] the applicable appropriations available to the War Food Administration current at the time services are rendered or payment therefor is received, may be reimbursed by nongovernmental agencies or foreign governments (by advance credits or reimbursements) for the actual or estimated costs, as determined by the War Food Administration, incident to procuring agricultural commodities for such nongovernmental agencies or foreign governments (Act of July 12, 1943, Public Law 129).

The first change inserts, in the interest of clarity and completeness, reference to Executive Order 9310, dated March 6, 1943, which transferred nutrition functions, powers and duties from the Office of Defense Health and Welfare Services. By Secretary's Memorandum No. 1078, dated March 11, 1943, these functions were placed in the Food Distribution Administration. Subsequently, Executive Order 9334, dated April 19, 1943 (which Executive Order is cited in the language of this appropriation) transferred to the War Food Administration among other things, all powers, functions and duties of the Secretary of Agriculture which related to or had theretofore been exercised through the Food Distribution Administration. Thus it is clear, by a process of cross reference, that this appropriation is available in the fiscal year 1944 for carrying out the nutrition functions that were transferred by Executive Order 9310. However, in the interest of rounding out the citations to Executive Orders so that the application of this appropriation to Executive Order 9310 will be apparent on its face, it is recommended that this additional citation be inserted.

The second change deletes the words, "the Classification Act of 1923, as amended" and substitutes "civil service and classification laws," in the clause relating to temporary employment by contract. This change is in the interest of uniformity, and will make this item more nearly identical with other similar clauses in other appropriation acts.

Next, authority is recommended for (1) paying actual transportation and other necessary expenses and not to exceed $10 per diem in lieu of subsistence of collaborators or other without-compensation advisers while serving away from their permanent homes or regular places of business; (2) travel expenses and regular per diem to post of duty of per diem or when-actually-employed personnel who are engaged intermittently away from their homes or regular places of business as consultants. The first mentioned authority was provided in the "First Supplemental National Defense Appropriation Act, 1943" from which War Production Board activities transferred to the Department in the fiscal year 1943 were financed, and therefore was available to the War Food Administration with respect to the funds transferred from WPB in 1943. The second authority was included (though in somewhat broader form) in the National War Agencies Appropriation Act, 1944, from which the WPB and other war agencies are financed in the current fiscal year. The authority under which the war agencies are operating, however, permits payment of per diem in lieu of subsistence at place of employment of personnel receiving other compensation, but that additional authority is not requested here. The absence of these authorities in the current fiscal year has already resulted in the loss of consultants in some instances and in other cases the making of employment arrangements which are more costly in the long run in order to obtain certain essential consulting services.

The next change deletes the special language which was necessary in the 1944 Act to authorize transfers of funds to certain of the Staff Offices (Office of Secretary of Agriculture for personnel, budgetary and financial administration and general operation, Office of Solicitor, Office of Information and the Bureau of Agricultural Economics). This language was needed in the 1944 Act, since the estimate for this appropriation was submitted after the Budget was printed, and consequently no amounts were shown therein as being transferred to these Offices. In the 1945 Budget, however, estimated transfers are indicated in the schedules, and the special transfer language in this item is no longer necessary.

The last change provides for reimbursement to applicable appropriations of the War Food Administration for the administrative costs of purchasing agricultural commodities for nongovernmental and foreign governmental agencies (Section 601 of the Economy Act already provides authority for reimbursement from agencies of the U. S. Government).

During the early stages of FDA's purchase and stockpiling activities, the stockpile was used almost exclusively to fill the needs of supply programs administered by the Food Distribution Administration. Under this arrangement, it was proper that the administrative expenses of the stockpiling operation be paid by the FDA programs which the stockpile served. During the past year, however, an increasing number of transfers have been made from the stockpile to programs for which FDA has no responsibility and no appropriated funds. When commodities are delivered to other Federal agencies, transfers of administrative funds may be accomplished under Section 601 of the Economy Act. If the transferee is a nongovernmental

agency (such as the Russian War Relief, and the Canadian Red Cross) or a foreign government not eligible for Lend-Lease aid (such as Sweden and Canada) no machinery is available under which the Food Distribution Administration may be reimbursed for out-of-pocket administrative expenses.

Until recently such transfers amounted to such a small part of the total stockpile operation that they could be handled without increasing the cost of the stockpiling program. However, the number of applicants for agricultural commodities is now increasing in direct ratio to the improvement in shipping facilities and the need for replenishing stocks in nations cut off from normal supply sources during the war. By filling these needs from a central stockpile, competition for commodities and the necessity for a multiplicity of purchasing agencies is eliminated. Each of these customers, however, requires individual and specialized service. Based on the dollar value of the commodities transferred, the costs of supplying their needs is far in excess of the costs of supplying foreign governments under the Lend-Lease program. This language is designed to permit reimbursements to the Food Distribution Administration for out-of-pocket costs incurred in the course of supplying this service.

Consolidated Statement of Overtime Costs
(Includes transfers and allotments)

	1943	Est. 1944	Est. 1945
Overtime absorbed	a/ 255,011	141,239	141,239
Additional funds for overtime (appropriated, 1943; estimated supplemental, 1944; and included in budget estimate, 1945)	7,000	1,906,020	2,106,976
Total cost of overtime (7 months in 1943)	262,011	2,047,259	2,248,215

a/ Difference between overtime cost and additional appropriation for overtime. Includes amounts absorbed under funds transferred from WPB and the Office of Community War Services pursuant to Executive Orders 9280 and 9310.

OFFICE OF THE WAR FOOD ADMINISTRATOR
(Allotment from "Salaries and expenses, War Food Administration")

Estimated allotment, 1944 (including $23,484 anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943)	$308,484	
Budget estimate, 1945	250,000	
Decrease	-58,484	(1)

INCREASES AND DECREASES

(1) The net decrease of $58,484 in this allotment for 1945 consists of:

(a) A decrease of $65,000 due to the fact that obligations were charged to this allotment during the first quarter of 1944 for food information activities that will be financed in 1945 from the funds transferred to the Office of Information, and

(b) An increase of $6,516 to provide for the same staff for the fiscal year 1945 that it is contemplated will be required at the close of the current fiscal year.

WORK UNDER THIS ALLOTMENT

This allotment finances the immediate office of the Administrator, assistant administrators, immediate staff advisors and assistants and their secretarial help. Provision is included for a Director of Transportation to coordinate the transportation work of the various agencies of the War Food Administration and be responsible for formulating and supervising the execution of general transportation policies and directing War Food Administration activities in connection with the movement in, out, and within the country, of food and farming and food processing materials and facilities. Also included is an Office of Price, which has supervision over all functions of the War Food Administration relating to approval of maximum prices to be fixed for agricultural commodities or products, and relating to price support programs in connection with particular commodities.

No attempt is made under this allotment to provide detailed budgetary, personnel and general operations services for the employees involved, responsibility for these functions having been assigned to the appropriate established organizations of the Office of the Secretary.

OFFICE OF DIRECTOR OF FOOD PRODUCTION

(a) (Allotment from "Salaries and expenses, War Food Administration")

Estimated allotment, 1944 (including $22,061 anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943)	$228,061
Budget estimate, 1945	425,000
Increase	+196,939 (1)

INCREASE

(1) The increase of $196,939 in this allotment is due to the necessity of financing, on a full year basis in 1945, the staff that will be in operation at the end of the fiscal year 1944 and to provide for a small amount of additional assistance necessary in order to handle additional urgent commodity problems.

WORK UNDER THIS ALLOTMENT

Objective: To unify and supervise effectively the production programs of the War Food Administration, and to provide facilities for special emphasis on particular commodity production problems and food production orders.

Problem and Plan of Work: Because of the unprecedented demands for production of food needed in the war, the programs of the War Food Administration must be uniformly developed and directed to assure maximum production with due regard for conservation of basic land resources. Special needs for specific products and services must be met quickly through effective program development work in the Administration.

Because of the number of individual agencies involved in the food production field, it has been found to be generally more effective to handle the program development work at the level of the Administrator's office. Major programs, because of their vital character, must be dealt with by specialists in an over-all capacity.

As an example, the current critical feed and livestock situation illustrates the need for the maintenance of a proper balance between the available feed supplies and livestock production. This is one of the most critical problems in connection with the production of livestock and livestock products. To meet this situation it is necessary to have available a small group of specialists who can devote their attention to programs needed to promote feed production and utilization of feed in livestock production and the administration of feed orders.

In the field of conservation there is a continuing need for a group of specialists on a wide range of water and land-use problems. Under supervision of the Director of Food Production, this group assists in the development of conservation and use programs that are consistent with needs, land capabilities, and available resources and assist the War Food Administrator in matters pertaining to water conservation and land-use development work. A major responsibility of this group will be the unification and further improvement of conservation programs and policies in the War Food Administration.

Similar groups of specialists must be available to assume leadership under the supervision of the Director of Food Production for making necessary adjustments in connection with problems which will continue to arise with respect to fruits, vegetables, and other commodities.

A small staff will be retained by the Director to provide leadership in program development and coordination of program and administrative matters. The Director and this staff will assist the Administrator in the review and appraisal of the most important agency proposals relating to food production and thus prevent independent uncoordinated action on the part of agencies administering phases of the entire production program.

(b) Allotment from "Conservation and Use of Agricultural Land Resources" ($35,000, fiscal year 1944).

(c) Allotment from "Soil Conservation Service" ($35,000, fiscal year 1944 and $15,000, fiscal year 1945.

(d) Allotment from "Water Facilities, Arid and Semi-arid Areas" ($10,000, fiscal year 1944).

(e) Allotment from "Water Conservation and Utilization Projects" ($25,000, fiscal year 1944).

These four budget schedules cover allotments to the Office of Director of Food Production, totaling $105,000 for 1944, and $15,000 for 1945. These funds hold finance the supervision and coordination of soil and water conservation and utilization programs of the War Food Administration.

OFFICE OF MATERIALS AND FACILITIES

(Allotment from "Salaries and expenses, War Food Administration")

Estimated allotment, 1944 (including $144,028 anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943)	$1,194,028
Budget Estimate, 1945	1,120,000
Decrease	-74,028

DECREASE

The decrease of $74,028 in this allotment for 1945 is made possible by:

1. The improvement of the materials and equipment situation, in some respects, requiring less detailed attention to and scheduling of certain programs. The easing of supplies of steel and other metals, however, affects only a part of the work of this office. Where critical component parts are involved - engines, bearings, malleables, etc., - the problem is more acute than six months ago. On balancing the various factors of workload involved, however, some curtailment of detailed programming work is indicated.

2. Decentralization by the War Production Board to the field of certain priority work, resulting in a somewhat less volume of work to be handled at the Washington level. However, considerable attention must be given by the Washington office to supervision and review of actions taken in the field to prevent (1) programs getting out of balance and (2) rapid depletion of allotted materials because of uncoordinated regional action.

WORK UNDER THIS ALLOTMENT

Objective: To assure an adequate supply of farm and processing machinery, equipment, materials and facilities to achieve the food production goals by means of:

1. Securing from the War Production Board adequate allotments of critical material and component parts sufficient to meet food program needs.

2. Satisfactory translation of these allotments into finished products in time to meet the food program requirements by careful scheduling of production of agricultural and processing equipment and component parts.

The Problem and its Significance: Shortages of many materials and particularly critical component parts due to the unparalleled demands brought about by the war, and the unavailability of many products and raw materials formerly imported, has made it necessary to control the use of critical resources. Controls are necessary in order that limited supplies will be most efficiently used in furtherance of the total war effort, and in order to maintain a balance between all essential factors of American production.

It is the responsibility of the War Food Administration, and specifically, of the Office of Materials and Facilities, to see to it that agricultural producers and processors secure a fair and adequate share of scarce materials and facilities, in order to meet production goals and schedules. The principal categories of resources involved are: farm machinery and supplies, structures, fencing, packaging, containers, storage, transportation facilities (including fuel and rubber in connection therewith), chemicals, fertilizers, and food processing machinery, structures and repairs.

Typical of the specific type of problem involved is the necessity for meeting critical needs for replacements of food industry machinery and facilities, and farm machinery and containers. Up until now, the food industry and farmers have to a large extent been expending their capital equipment and machinery--constantly repairing, rebuilding, using make-shift devices, etc., to postpone the day when new and replacement machinery and containers would be the only alternative to complete breakdown. Orderly and efficient replacement schedules have been long over-extended, and in more and more cases new equipment is now the only means for continued operation. Thus the problem of allocation of limited resources becomes more acute and extreme care must be taken to see that available supplies are assigned in such a way that essential operations may continue.

Plan of Work: The Director of Materials and Facilities serves as representative of the War Food Administration on the Requirements Committee of the War Production Board. The successful execution of this responsibility necessitates the complete and timely assembly of balanced programs and periodic accounting for allotted materials and facilities, and requires the constant collaboration of the various

War Food Administration operating units and Office of Materials and Facilities.

Materials and facilities requirements rest primarily upon the determination of farm goals and food requirements. In accordance with schedules and procedures formulated by the Office of Materials and Facilities, the operating branches and agencies of the War Food Administration submit their programmed food requirements and goals together with their recommendations for materials and facilities. The Office of Materials and Facilities, in collaboration with operating agency personnel, the War Production Board, and industry advisors, develops and determines final programs for submission to the WPB Requirements Committee and related organizations.

Operating branches and agencies also recommend plans for the distribution of allotted materials and facilities, and the Office of Materials and Facilities implements these distribution plans in harmony with War Production Board procedures and the allotted supply.

Specifically, the Office carries out the following functions:

1. Determines the need for equipment and controlled materials required to implement the production, processing, and storage objectives of the various branches and agencies of War Food Administration. In this determination it collaborates closely with the operative branches and agencies of War Food Administration, and appropriate WPB Industry Divisions and Committees and other war agencies.

2. Presents and defends these requirements before War Production Board Industry Divisions, Program Bureau, and Requirements Committee.

3. Allocates allotments of controlled materials received from War Production Board to specific programs of War Food Administration.

4. On the basis of these allocations and with the assistance of the various War Production Board Industry Divisions, schedules the production of food, feed and fiber processing equipment, metal containers, farm machinery, and special machinery of the larger agricultural processing industries.

5. Processes construction applications and applications for the purchase of machinery in all fields relating to the production, processing, and storing of foods.

Certain critical materials essential to agriculture are involved in the Controlled Materials plan. Controlled materials are certain primary forms and shapes of carbon steel, alloy steel, copper and aluminum, such as rods, bars, plates, sheet, steel pipe, castings, ingots, wire - which with some exceptions are the forms in which these metals leave the mill.

The "controlled materials plan" applies to the controlled material requirements of two major food programs - metal containers and farm machinery - which account for nearly 90% of Agriculture's total "controlled-materials-plan" requirements. The same plan also applies to the controlled materials needed to make the special machinery of certain important industries which process agricultural raw materials, to controlled materials for construction work on farms and in the agricultural processing industries, and to a few still smaller items such as controlled materials needed to construct and equip new fishing boats.

The industries which process agricultural products also require large amounts of "controlled materials" for maintenance and repair, which includes repair of buildings and the controlled materials purchased by agricultural processors' own machine shops for minor repairs to plant and equipment. On the basis of advice from the War Food Administration and other claimant agencies, it becomes the responsibility of War Production Board to see that adequate amounts are made available for farming and all the other manifold industries of the country for these "controlled materials".

Every three months the Office of Materials and Facilities, along with all other claimant agencies, must submit and defend before the central Requirements Committee of the War Production Board the combined controlled material needs of its various programs under the following classifications of controlled material requirements: Construction, Programmed B Products (special machinery of designated industries), farm machinery, metal containers, fishing boats and diesel engines for fishing boats. At the same time War Food Administration's "controlled material" requirements for maintenance and repair are reported to the Program Bureau of War Production Board and considered by them along with the similarly estimated requirements of other claimant agencies to determine what size pool of materials should be established for the industry of the Nation to draw on.

Examples of Current Programs

Farm machinery: The farm machinery program is described in some detail to indicate the type of problem involved in the work of this Office.

The farm machinery program has been developed on the basis of the 1944 farm goals, and is controlled by WPB Order L-257. The farm machinery and equipment authorized under L-257 will be sufficient to provide minimum requirements for meeting the 1944 crop goals, but because it is necessarily a minimum program, any failure to produce the authorized output for want of adequate component parts might result in failure to meet the 1944 goals. This does not mean that the production schedule will supply all the demands for farm machinery and equipment, but if this equipment is allocated to most effective use, it is expected to meet essential demands.

Production Under L-257 Compared with Present and Previous Years: The value of optimum production under the order is 285 million dollars (1940 valuation) for new equipment and 134 million dollars for repair parts. Average annual production for domestic use of L-257 items during the base period was 562 million dollars, and in 1941, 628 million dollars. These figures include quantities sold to other than farmers.

The previous farm machinery order L-170 permitted production to approximately 40 percent of 1940 production. Under L-257 for 1944 use, production is estimated at about 80 percent of the base period.

The Problem Confronting the Program: There is no assurance that the schedules now outlined under L-257 will be met. It is one thing to earmark strategic materials for this industry, but to complement these with the necessary components, especially engines, bearings and malleables, is proving a very complex problem. The War Food Administration is closely following this situation and is taking all steps possible to solve the problem.

Because food goals for 1944 have changed since L-257 was drawn up, the Office has revised farm machinery needs and the War Food Administration may have to request War Production Board to authorize additional items of equipment, such as potato diggers, sprayers, corn diggers, side-delivery rakes for peanuts, dry beans and peas, combines for wheat and soybeans, milking machines, cream separators and cooling equipment, and possibly peanut pickers and stationary balers for peanuts. The increased quantities for all these purposes will require about a 5 or 6 percent increase in the total materials allocated to the production under Order L-257.

Farm machinery purchased since the close of the World War I is estimated to be within the following age brackets:

Less than 6 years old	32 percent
Between 6 and 12 years old	14 percent
Between 12 and 24 years old	54 percent

About 25 percent of the farm machinery inventory is now in the average discard age --15-18 years. To maintain this 25 percent would undoubtedly take more labor, from the manufacturer through the repair man, than to build new and more efficient machines under modern fabricating processes.

Because of these factors Order L-257 was written several months in advance of the 1943-44 crop year to avoid any delay in producing the much needed new equipment. The principal difficulty in the program is in the obtaining of critical components for equipment for which manufacturers of farm machinery had already obtained controlled materials, and the War Food Administration has made special effort to get to the manufacturers as soon as possible their pro rata share of allotted controlled materials so that they would be among the first to place orders on the mills.

Distribution and Rationing: In 1943, production and distribution factors necessitated rationing and distribution controls over 91 types of farm machinery. In 1944 better production and distribution conditions will make possible reducing the number of types of machinery over which distribution controls will be maintained to only 46 types, and over which rationing controls will be maintained to 31 types.

The new rationing and distribution program provides for a minimum control over distribution. More normal trade relationships will exist between farmers, dealers, and manufacturers. Only the most essential equipment is to be rationed. While a few types of machines may not be vital to all sections of the country, each type is of major importance to some areas and essential crops.

Other major programs for which the Office is responsible are listed as follows:

Fertilizer and Chemicals
- Fertilizer
- Nitrogen
- Superphosphate
- Potash
- Insecticides and fungicides
- Arsenic
- Rotenone
- Pyrethrum
- Nicotine Sulphate
- Cryolite and Orgar thiocyanates
- Sulphur
- Copper sulphate
- Mercurials
- Barium and solium fluosilicate
- Miscellaneous agricultural chemicals

Alcohol Feed Recovery Program

Miscellaneous Farm Supplies

Merchant Steel Products (barbed wire, woven wire, bale ties, nails and staples, pipe)

Copper Wire

Farm Construction

Farm Transportation (repair parts, tires, gasoline, etc.)

On-Farm Storage Facilities

Containers and Packaging
- Crowns
- Milk cans
- Metal cans
- Closures (home)
- Closures (commercial)
- Steel drums
- Wood boxes
- Cooperage

Packaging and Shipping containers
- Fiber and corrugated boxes
- Wooden shipping cases, etc.

Food Processing Machinery
- Commercial Processing machinery
- Home preserving equipment

Refrigeration
- Cold storage
- Ice manufacturing equipment
- Refrigeration equipment for food processors

Irrigation and Drainage equipment and materials

OFFICE OF LABOR

(Allotment from "Salaries and expenses, War Food Administration")

Estimated allotment, 1944 (including $48,840 anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943)	$ 426,812
Budget estimate, 1945	850,000
Increase	+423,188

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase
1. Food Industry labor	--	$29,791	$50,000	$+20,209 (1)
2. Agricultural Wage Stabilization	--	397,021	800,000	+402,979 (2)
Total available	--	426,812	850,000	+423,188
Allotted from "Salaries and expenses, War Food Administration"	--	-426,812	-850,000	
Total estimate or appropriation	--	--	--	

INCREASE

The increase of $423,188 in this allotment consists of:

(1) An increase of $20,209 for operating the Food Industry Labor Branch during 1945 on a full fiscal year basis.

Objective: To further assist in the retention, recruitment, and placement of workers in the food industries; to analyze wage problems in these industries; and to assist in manpower utilization and worker-morale programs.

The Problem and its Significance:

(a) Farmers are being encouraged to produce increased quantities of raw foodstuffs. The need for this raw material cannot be questioned, yet much of this material cannot be effectively used in the war program unless it is converted into processed form. The necessary management of foodstuffs after leaving the farm encompasses activities of packaging, processing, transportation, storage, and distribution through

wholesale, retail and other channels. Effective management of food supplies while in these channels is directly dependent upon the manpower situation in each activity.

(b) Unprecedented demands for manpower by the armed forces, agriculture and industry is seriously threatening not only the ability of food processing industries to convert raw foodstuffs into processed form but also the ability of the food distribution industries to transport, warehouse and distribute the available food supply. In addition to the overall stringency in manpower supply, this condition is resulting from many factors which impinge upon the productivity of the labor available for these activities. These problems involve worker morale, labor turnover, absenteeism, wage policies, working conditions, housing conditions, employer-employee relations, Selective Service policies, and types of workers available in terms of age, sex, and experience.

(c) In order to meet these conditions effectively, information must be immediately available on the effects of manpower situations, policies, and programs on the food industries as a whole and on specific plants and establishments. This is of particular urgency with regard to perishable foods which must be processed. The extreme perishability of raw fruits and vegetables necessitates immediate processing to prevent loss in volume and quality.

(d) Action must be taken to assure that detailed facts about the current production situation in the food industries and the effect of various labor and wage programs upon the food situation are currently made available to the agencies whose programs effect manpower, and to assure that comprehensive information on the labor and wage situation in the food industries and the relationship of this situation to food supplies is currently available to the War Food Administrator and his staff assistants in charge of specific phases of the food program.

(2) An increase of $402,979 under the project "Agricultural Wage Stabilization" is requested to provide for an estimated increase in work load and to cover the additional expense of a full fiscal year's operation during 1945.

Objective:

(a) To control agricultural labor costs in relation to price control as a means of avoiding inflation in accordance with Executive Orders issued pursuant to Public Law 729;

(b) To control agricultural wage rates in relation to industrial wage rates to prevent undesirable shifting of manpower; and

(c) To prevent "wage spiralling" through competition between farmers for labor, leading to "pirating" of labor, high labor turnover, and loss of working time.

The Problem and its Significance:

It is estimated that approximately twice as many wage determinations will be necessary in 1945 as were made during the eight months of 1944, as indicated by present agricultural wage trends. Development of essential organization, plans, methods and techniques during 1944 will make possible a full year's operation during 1945.

In accomplishing the objectives of the agricultural wage stabilization program there is an estimated need for the stabilization of agricultural wages during the fiscal year 1945, as follows:

Cotton	-- California, Arizona, Texas
Fruit	-- California, Florida, Maryland, New Jersey, Oregon, Washington, New York, North Carolina, Texas, Virginia
Vegetables	-- California, Florida, New York, New Jersey, North Carolina, Virginia, Texas, Washington
Potatoes	-- Idaho, Maine, North Dakota
Dairy	-- California
Sugar Beets	-- Colorado, Idaho, Wyoming, Montana, Nebraska, Michigan

Stabilization may be conceived in terms of two alternative approaches:

(a) freeze the general wage structure prevailing as of a specified date, and then supervise and administer changes therefrom;

(b) determine a specific level of wages and then administer that level, making necessary adjustments.

The former method is used by the War Labor Board, but it is not adaptable to the stabilization of agricultural wages for the following reasons:

(a) Farm employment is not sufficiently standardized and uniform for the wage rates of a given date to be specific or known. Farm employment is widely scattered and the employment contracts are very informal.

(b) As of a given date, many seasonal tasks would not be in operation; therefore, these operations would be without a stabilization base.

For the above reasons, it is apparent that a general date-freeze of the prevailing structure would not provide a sufficiently complete or concrete and known base upon which to administer a wage stabilization program. Consequently, a farm wage stabilization program requires the determination of a basic stabilization wage.

Basic stabilization rates should be established in the light of the following considerations.

(a) The past levels and trends of wages for the specific operation.
(b) Customary differences by areas or districts.
(c) Extent to which wages are substandard.
(d) Relation of wage rates to growers' prices.
(e) Relation of farm wages to wages in nonfarm occupations.
(f) Relation of wages in the specific operation to other farm wage rates in the area.
(g) Amount of perquisites received.

The wage determination will need to be a composite, which, so far as possible, will facilitate the obtaining of sufficient labor, yet not be inflationary or in excess of the growers' capacity to pay.

Accomplishments to Date:

Agricultural wage determinations have been made in five crop areas for raisin grapes, cotton, canning tomatoes, asparagus, and citrus fruits. Four of the initial determinations were made in the critical West Coast manpower shortage area. The establishment of wage rates in these areas has provided valuable experience which has made it possible to develop more thoroughly a plan of work which is expected to facilitate conduct of the program.

Plan of Work:

Within a State the administration and enforcement of the wage stabilization program will be in the hands of a State Agricultural Wage Board, using the facilities of such county Wage Boards as may be required. The wage determinations will be made by or under the supervision of a State Wage Board. In making the determinations, the Wage Board will hold such hearings and make such field investigations as are required. It is expected that it will be necessary for the stabilization program to be handled by production or labor market areas. At least one public hearing in connection with determining the basic stabilization rates will be required in each area. Under such arrangements it will be necessary for funds to be available to employ personnel and to pay necessary travel and other expenses of such Boards.

The Office of Labor will give necessary assistance, in the field, to State Wage Boards in detecting and checking any inflationary movement of Agricultural wages through the execution of the following functions:

(a) Assembling basic data on ranges of wage rates paid for specific crop operations, definitions of jobs, sizes and weights of containers, amount of perquisites, competitive crop areas, etc.

(b) Taking account of changes in agricultural wage rates with special reference to those which, by creating "unstabilizing inequalities", may give rise to demands for wage ceilings.

(c) Working out rates, with respect to specific crop operations, which wage rates should not be exceeded without being regarded as inflationary.

(d) Determining the branches of production (1) in industry and (2) in agriculture that are in competition for farm labor, also the rates of pay at which such competition can be stabilized, eliminated or directed in the national interest.

The primary functions of the Washington Office of Labor will be:

(a) To evaluate and appraise wage ceiling recommendations of State Boards, for the information of the Administrator;

(b) To maintain contact with the field offices for the purpose of coordinating programs, improving procedures of administration and enforcement, etc.;

(c) To determine appropriate standards as to what constitutes "inflationary," "substandard," "obsolete," or "chaotic" farm wage rates, in accordance with comparable standards applied by the War Labor Board, etc.

COMMODITY CREDIT CORPORATION

(a) Salaries and Administrative Expenses

(a) The amounts expended under this heading are made available from the capital funds of the Commodity Credit Corporation.

Appropriation Act, 1944	$4,500,000
Anticipated deficiency for overtime pay required by War Overtime Pay Act of 1943	+655,707
Total anticipated available, 1944	5,155,707
Budget estimate, 1945	5,760,526
Increase	+604,819 (1)

INCREASE

(1) An increase of $604,819 (including $104,819 for overtime costs under the War Overtime Pay Act of 1943) to enable the continued performance by the Corporation of the administrative functions in purchasing, storing, selling, lending upon and handling of commodities and the necessary accounting, auditing and supervisory work incident thereto, in order to: (a)Aid in obtaining increased agricultural production; (b) carry out price support programs for needed agricultural commodities; (c) promote the orderly marketing and distribution of such commodities as dry edible beans and peas, wool, peanuts, and potatoes; (d) provide for expansion in existing programs related to grain and feed, vegetable oils, and sugar; and (e) engage in activities designed to correct inequities, shortages, and other abnormal conditions arising from transportation, production, supply, machinery and labor conditions affecting agricultural production.

In addition to continuing previous activities, 48 new programs have been added since the beginning of the fiscal year 1943 -- 38 of them since the budget estimate for Commodity Credit Corporation administrative expenses for 1944 was submitted to the Congress. This has, of necessity, brought about an increase in the activities of the Corporation during the fiscal year 1944 over those originally contemplated in the budget estimate for such fiscal year. The budget estimate for the fiscal year 1945 is predicated on the assumption that the Corporation will continue to carry out its major programs during that year substantially as such programs are now being carried out, except for programs of a temporary nature. In view of these additional activities, it is anticipated that it will be necessary to request a supplemental authorization for administrative expenses of the Corporation for the fiscal year 1944. To the extent that additional funds for 1944 are approved by the Congress, the proposed increase of $604,819 for 1945 will be offset accordingly.

CHANGE IN LANGUAGE

The estimate includes a proposed change in the language of the fourth proviso, as follows (new language underscored):

> Provided further, That the foregoing shall not apply to the sale or other disposition of any agricultural commodity substantially deteriorated in quality or in the case of perishable commodities, if there is danger of deterioration or of accumulation of stocks.

This change would add perishable commodities, if there is danger of deterioration or accumulation of stocks, to the exceptions to the prohibition against the sale of Government-owned or Government-controlled stocks of farm commodities at less than parity, and would enable the Corporation to carry out price support programs on perishable commodities without risk of wasting food through lack of authority to dispose of it until it had completely deteriorated. The Corporation has undertaken loan and purchase programs on Irish potatoes and sweetpotatoes, and may be called on, in an effort to induce increased production, to carry out price support programs on other perishable commodities.

FUNCTIONS AND FINANCIAL CONDITION

Organization: Commodity Credit Corporation was created as an agency of the United States on October 17, 1933, pursuant to Executive Order No. 6340, dated October 16, 1933. Its functions as an agency of the United States have been continued from time to time, and pursuant to Public Law 151-78th Congress, these functions were continued to December 31, 1943, or such earlier date as may be determined by the President of the United States. By Public Law 219, 78th Congress, approved December 23, 1943, the Corporation's functions as an agency of the United States were further continued to February 17, 1944.

The Corporation was transferred to the Department of Agriculture on July 1, 1939 by Reorganization Plan No. 1, and it was made a part of the War Food Administration by Executive Order No. 9322 as amended by Executive Order No. 9334 of April 19, 1943.

The Agricultural Adjustment Act of 1938, as amended (7 U.S.C., 1940 ed., Supp. I, sec. 1330), authorizes and directs the Corporation to make loans available on the basic commodities cotton, corn, wheat, rice, tobacco, and peanuts up to and including the 1946 crops. The Act of October 2, 1942 (50 U.S.C., 1940 ed., Supp. II, app., sec. 968), provides for loans to be made available on these commodities until two years after the 1st of January following a declaration of the termination of the present war. The Act of July 1, 1941, as amended (15 U.S.C., 1940 ed., Supp. II, Sec. 713 a-8), also provides for loans, purchases, or other operations to support the prices of non-basic commodities for which expansion of production is necessary, during the same period. This Act also declares

a policy of conducting lending and purchasing operations in such manner as to bring the price and income of producers of other non-basic commodities to a fair parity relationship with other commodities, to the extent that funds are available for such purpose.

Manner in which loans are made: Loans are made by the Corporation to producers and to associations of producers. More than 90 percent of the loans to individual producers are made indirectly through private lending agencies. In most instances the private lending agency is the producer's local bank which makes a loan under conditions specified by the Corporation and on forms provided by the Corporation. The local bank (private lending agency) receives a guarantee from the Corporation to purchase the note upon demand at its face value, plus accrued interest at the rate of 1½ percent. The difference between the rate of 3 percent charged all producers on all Corporation loans and the smaller rate of interest obtained by the private lending agencies represents the compensation of the Corporation for its operating expenses.

Financial structure: Commodity Credit Corporation has an authorized paid-in capital of $100,000,000. In addition, it was authorized by the Act of March 8, 1938 (15 U.S.C. 713a-4), as amended, with the approval of the Secretary of the Treasury, to issue and have outstanding at any one time, notes, bonds, debentures, and other obligations not to exceed $3,000,000,000 which are fully and unconditionally guaranteed as to principal and interest by the United States.

Capital gains and losses: The Act of March 8, 1938 (15 U.S.C. 713a-1, 2), as amended, provides for readjustment of the net worth of the Corporation to the amount of its $100,000,000 capital once each year. The Act requires that the Corporation's assets and liabilities be appraised by the Secretary of the Treasury as of March 31 of each year on the basis of the cost of such assets to the Corporation, including not more than 1 year of carrying charges, or the average market price of such assets for a period of 12 months ending with March 31 of each year, whichever is less. Provision is also made in the Act (a) that any deficiency of its net worth under $100,000,000 be restored by the Secretary of the Treasury, and (b) that any excess in its net worth over $100,000,000 shall be paid into the General Fund of the Treasury. The appraisals made by the Secretary of the Treasury, as of March 31, 1938, March 31, 1939 and March 31, 1941 disclosed capital impairments of $94,285,404.73, $119,599,918.05, and $1,637,445.51, respectively, and these amounts were restored by the Treasury. The appraisals as of March 31, 1940, and March 31, 1942 showed that the net worth of the Corporation exceeded $100,000,000 by $43,756,731.01 and $27,815,513.68 respectively, and these amounts have been paid into the General Fund of the Treasury. The appraisal of the assets and liabilities of the Corporation as of March 31, 1943 had not yet been completed on December 31, 1943, but it is estimated that capital impairment will not exceed $45,000,000.

It should be noted that the amounts appropriated to the Corporation to restore capital impairments or the surpluses paid into the Treasury in connection with readjustments of the Corporation's capital under the terms of the Act of March 8, 1938, are not a measure of its realized gains and losses. They represent estimates as to what the Corporation's loss or profit would have been if all the commodities owned by or pledged to the Corporation had been liquidated at the appraised value. No actual loss is taken by the Corporation or shown on its books until the commodity has been sold for an amount less than the Corporation's investment. From October 17, 1933 to September 30, 1943, the actual losses of the Corporation have amounted to $156,385,760.15. There is shown below a condensed operating statement covering this period.

Income:		
Interest income	$55,163,441.47	
Other income	32,379,181.47	$87,542,622.94
Expense:		
Interest expense	51,453,482.08	
Operating expense	24,499,724.02	
Depreciation fixed assets	3,886,120.70	79,839,326.80
Excess of operating income over operating expenses		7,703,296.14
Realized losses on commodities		164,089,056.29
Excess of operating expenses and realized losses over operating income		$156,385,760.15

Current and estimated operations: The total volume of loans and purchases, and liquidations and sales during the fiscal year 1943 was greater than any previous year, and with the initiation of price supports on many additional commodities, the volume of transactions during the fiscal year 1944 may be fully as large. With every effort being made to reach the greatly increased production goals for the 1944 crop year, price supports will be even more important during the fiscal year 1945 and a larger volume of loans and other operations is possible, particularly in connection with wheat, soybeans, peanuts, sugar beets, potatoes, dry beans and peas, and tobacco for which sizeable increases in acreage have been requested. In spite of the large volume of loans and purchases, stocks of commodities owned or controlled by the Corporation may continue to decrease during the fiscal years 1944 and 1945 since it appears that the loans and price support programs of the Corporation will be utilized by producers primarily as a means of financing a more even distribution throughout the marketing period.

Statement of Overtime Costs

	1943	Est.1944	Est.1945
Overtime absorbed	*100,007	- -	- -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	230,900	655,707	760,526
Total cost of overtime	330,907	655,707	760,526

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: The programs of the Commodity Credit Corporation are integral parts of the War Food Administrator's war food program, and have as their chief objective the maximum production of essential agricultural commodities. Production goals for 1944 call for the planting of 380 million acres, an increase of 16 million acres over 1943, when the total food produced in the United States exceeded the previous year's record production by about 5 percent. Substantial increases are requested in the production of corn, hay, wheat, soybeans, peanuts, flax, sugar beets, sugar cane, Irish and sweetpotatoes, fresh vegetables, dry beans and peas, and tobacco. The achievement of these goals will require the use of lands now idle, a shift to more productive crops, the adoption of improved practices, efficient utilization of labor, machinery and materials, and the assurance of necessary price supports. The chief functions of Commodity Credit Corporation are to provide the price supports, and to assist in orderly marketing.

Progress and Current Programs:

During the fiscal year 1943 increased emphasis was placed on price support programs as an incentive to maintain necessary production of essential agricultural commodities. Purchase and sale operations were utilized not only to implement the price supports, but also to relieve tight situations which developed for some commodities as a result of the pressure of support prices, plus processing costs, against price ceilings. Government-owned stocks were directed into channels contributory to the war effort and purchase of essential agricultural commodities both at home and abroad were expanded as a means of meeting essential needs and stock piling for future requirements.

In addition to the basic commodities cotton, corn, wheat, rice, tobacco and peanuts, price supports were available for apples, apricots, barley, butter, castor beans, dry edible beans, American-Egyptian and Sea Island cotton, cottonseed, cheese, chickens, hogs, eggs, dry skim and evaporated milk, turkeys, soybeans for oil, flaxseed for oil, dry peas, white and sweetpotatoes, vegetables for fresh consumption and for canning, dried

fruits, grain sorghums, hemp, wool, rye, sugar beets, gum naval stores, hay and pasture seeds, and other agricultural commodities. Purchase and sale programs were carried out in connection with dairy cattle, fluid milk in certain areas, millfeeds, cotton linters, and vegetable oils and oilseed cake and meal. Government-owned wheat was sold for feed to supplement a short supply of feed grains, and corn and wheat were sold for the production of industrial alcohol. Many domestically produced commodities were purchased for allocation to meet Army, Navy, Lend-Lease, Red Cross and other war needs, and large quantities of foreign-produced coffee, sugar, cocoa, tea, vegetable fats, oils and oilseeds, and other essential commodities were purchased for direct war usuage or for stock piling. Quantities of Government-owned cotton, corn, tobacco and gum naval stores were sold for Lend-Lease, cotton was sold for the manufacture of cotton bale covers, binder twine, and insulation. Purchase of agricultural supplies included grain bins and grain loading elevators, castor-bean seed, cotton bagging, burlap, peanut bags, machinery and equipment, peanut seed, hybrid seed corn, pyrethrum seed, airplane grade spruce logs, and American-Egyptian Sea Island and other long staple cotton.

Cotton

Pursuant to Public Law 729, 77th Congress, the loan rate on 1942 crop cotton was increased from 85 to 90 percent of parity after about 300,000 loans had been made, and these loans were adjusted to the new loan rate. Domestic consumption, together with exports including lend-lease, was approximately equal to the 1942 crop of nearly 13 million bales. Slightly less than one-fourth of the crop, over 3 million bales, was placed under loan at an average rate of 16.96 cents per pound for Middling 7/8-inch cotton, gross weight. Loans at 90 percent of parity as of August 1, 1943 are available on 1943-crop cotton at a base loan rate of 18.41 cents per pound for Middling 7/8-inch cotton, gross weight. Through November 20, 1943, loans had been advanced on nearly 1.7 million bales of 1943 crop, and it is estimated that total loans on 1943-crop cotton may exceed 3.5 million bales.

Prices advanced during the 1942-43 marketing season, and producers liquidated loans on about 800,000 bales of 1942-crop cotton and 400,000 bales of 1941-crop cotton by June 30, 1943. Redemptions have continued, and by November 20, 1943, less than 2 million bales of 1942-crop cotton remained under loan. Loans on 1941 cotton matured on September 15, 1943, on which date 336,000 bales were pooled. Any profit from the liquidation of the pool will be distributed among the farmers participating in the pool in proportion to their interest in the pool.

Approximately 1 million bales of Government-owned cotton were sold during the fiscal year 1943, of which 750,000 bales were for lend-lease, 90,000 bales for new uses -- binder twine, cotton bagging, insulation, and cotton batting -- and the remainder, about 160,000 bales, mostly low middling white and lower in grade, under the general sales program.

Sales since June 30, 1943, amounted to about 160,000 bales by October 20, as follows: Lend-Lease 109,000 bales, new uses 8,000 bales, and general sales program 43,000 bales. Owned stocks of cotton were approximately 2.8 million bales on September 30, 1943, about 1 million bales less than the quantity owned on September 30, 1942.

In order to encourage production of long-staple cotton, price supporting purchase programs were carried out on the 1942 crops of SxP and Sea Island cotton. The base price for SxP cotton was 43½ cents per pound for No. 2, 1½-inch cotton, and the Corporation purchased 5,572 bales out of the total production of 73,800 bales. Production of Sea Island cotton was 923 bales of which 33 bales were purchased by the Corporation. Commodity Credit Corporation also purchased 1,456 bales of Puerto Rican Special Sea Island cotton from the 1942 crop. Support prices have been announced for 1943-crop long-staple cotton at 48 cents per pound for No. 2, 1½-inch SxP cotton, 56-70 cents per pound for Puerto Rican Special Sea Island cotton and 48-59 cents per pound for Mainland Sea Island cotton. Purchases through November 22 amounted to 9,606 bales of SxP cotton and 363 bales of Puerto Rican Special Sea Island cotton.

During the fiscal year 1943 Commodity Credit Corporation also purchased the equivalent of 10,672 500-pound bales of Egyptian cotton for war uses, as well as 3,148 bales of Nicaraguan cotton which has since been sold for shipment to Canada, and about 28,000 bales of Peruvian cotton which is now in storage in Peru.

Under a directive from the War Production Board, Commodity Credit Corporation purchased the entire 1942 production of about 1,350,000 bales of cotton linters at the ceiling price, of which about 33,000 bales were sold on the open market and the remainder were sold to bleachers for chemical uses. About 60 percent of the 1943 production is being purchased for the same purpose.

Wheat

Loans on 1942 wheat were made available at 85 percent of parity and 406 million bushels of wheat were placed under loan at an average loan rate of $1.14 per bushel at the farm. By June 30, 1943, farmers had redeemed 133 million bushels and delivered 140 million bushels to Commodity Credit Corporation with 122 million bushels of farm-stored wheat still outstanding under loan and about 11 million bushels in process of liquidation. Redemptions are continuing with loans still outstanding on less than 63 million bushels of farm-stored wheat on November 20, 1943. Loans are available on the 1943 wheat crop at an average loan rate of $1.23 per bushel at the farm and, in addition, a purchase program was announced June 30, 1943, whereby Commodity Credit Corporation will purchase wheat from producers at the loan rate where producers are unable to ship to their normal markets, local storage is not available, and the Corporation owns bins in which the wheat can be stored. By November 13, 1943, loans had been completed on nearly 118 million bushels of 1943-crop wheat.

The Department of Agriculture Appropriation Act, 1943, authorized the sale of 125 million bushels of wheat for feed at 85 percent of the parity price of corn. This wheat was offered for sale at prices ranging from 74 to 99 cents a bushel during August 1942, and by March 1943, the original authorization was reached. Public Law 18, approved March 25, 1943, increased the quantity that could be sold for feed to 225 million bushels and Public Law 71, approved June 14, 1943, again increased the amount that could be sold for feed to a total of 275 million bushels. Both of these supplemental authorizations specified the minimum price at which wheat could be sold for feed as the parity price of corn, with a minimum price in any area not necessarily more than the United States average parity price of corn. Prices during March ranged from 93 cents to $1.09 per bushel and by June 30, practically all of the wheat had been sold.

The Department of Agriculture Appropriation Act, 1944, continues the authorization to sell wheat for feed at the parity price of corn, and sales were resumed on July 13, 1943, with about 180 million bushels being sold by November 20. In addition to the wheat sold for feed, Commodity Credit Corporation also sold approximately 7 million bushels for export, 65 million bushels for alcohol, and 20 million bushels for domestic consumption during the fiscal year 1943. Government-owned wheat totaled approximately 205 million bushels on June 30, 1943, and had dropped to 85 million bushels by November 20.

In order to supplement the reduced stocks of wheat available for feed, Commodity Credit Corporation, by June 30, had purchased about 8-3/4 million bushels of Canadian wheat. Purchases of wheat have continued since July 1, and through November 20, Commodity Credit Corporation purchased over 49 million bushels of wheat from Canada and about 22 million bushels from domestic sources. Commodity Credit Corporation also purchased nearly 8.5 million bushels of wheat during the fiscal year 1943 for the Federal Crop Insurance Corporation. This wheat was subsequently offered for sale by F.C.I.C. with purchase being made by Commodity Credit Corporation for its own stocks.

On December 30, 1942, Commodity Credit Corporation announced a program to support the price of millfeed at $1.50 per ton below the ceiling price. Millfeed prices rose above the support price in all markets by the middle of February and payments were made only on about 214 thousand tons of millfeed. The program was discontinued on June 9 since most of the 1942 wheat crop had been marketed and the need for the program no longer existed.

Corn

Loans were offered on 1942 corn at an average rate of 83 cents per bushel. The loan rate in the commercial corn area was 85 percent of parity and in the non-commercial area the rate was 75 percent of the loan rate in the commercial area. Loans were advanced on 56 million bushels of 1942 corn by June 30, 1943. Because of an extremely tight situation which developed in the movement of corn through commercial channels which made it virtually impossible for corn-processing plants to obtain supplies of corn for the production of war products, all loans on 1938, 1939, 1940, and 1941 corn were called for redemption or delivery of the collateral to Commodity Credit Corporation by July 1, 1943, and loans on 1942 corn were called effective July 15. Redemptions of corn during the fiscal year 1943 amounted to 249 million bushels, with the remainder, about 30 million bushels being delivered to the Corporation.

Practically all Government-owned corn was sold during the fiscal year 1943, with total sales amounting to approximately 72 million bushels, of which 37 million bushels were sold for feed, 24 million for the production of industrial alcohol, 4.5 million for lend-lease and export, and 6 million for processing into edible corn products. In a further effort to make corn available to processing plants in the late spring of 1943, corn stocks in 96 midwestern terminal elevators were requisitioned by the Corporation and over 6 million bushels were thus obtained to meet industrial war needs. On June 30, 1943, it was announced that any farmer who, between July 1 and August 10, inclusive, sold and delivered his corn to a country elevator acting as agent for Commodity Credit Corporation would be eligible to receive immediately the applicable ceiling price, and would be guaranteed a supplement payment if ceiling prices were increased on or before October 31, 1943. Because of this price guarantee and the fact that prospects for the new crop became more encouraging, sales of corn increased and factories making corn products were able to resume full-time operation.

Approximately 35 million bushels were purchased by Commodity Credit Corporation during the guarantee period, of which 23 million bushels were sold to corn processing plants, 2 million bushels were held by Commodity Credit Corporation as a war emergency reserve, and the remainder distributed through regular trade channels to feeders and feed mixers. By the end of September, the supply of corn in the hands of wet processors was again at a low ebb and the Price Guarantee Program was reinstated. Producers delivering corn to country elevators from September 28 through October 31, were assured of receiving a price adjustment in the event that the corn ceiling price was increased between the date of sale and November 30, 1943. The price, however, was not increased during this period.

On May 17, 1943, the Corporation agreed to sell corn to manufacturers, feed mixers and feeders in the New England, Atlantic seaboard, and Southeastern States at the lower ceiling prices prevailing in this area, or to purchase corn from such suppliers at the prevailing market prices in surplus areas and sell an equivalent quantity at a price basis comparable with the lower ceiling levels in the eastern area.

In order to establish a reserve of commercial hybrid-seed corn, approximately 160 thousand pounds of 1942 hybrid-seed corn was purchased by the Corporation and placed in cold storage. This seed corn will be available, if needed, for purchase by producers for planting in 1944.

A loan program on 1943-crop corn was announced November 26, 1943, with loan rates varying from 81 to 97 cents per bushel in the corn belt counties. In areas where loans are available outside the corn belt counties, 1943 rates range from 81 cents to $1.01 per bushel. The loan rates throughout the United States this year are based upon 85 percent of parity as of September 15, 1943, as contrasted with last year's 85 percent of parity in the commercial corn area and 75 percent of this rate in the noncommercial area. United States parity was $1.06 per bushel on September 15, 1943, as compared with 98.2 cents per bushel on the same date last year. It is expected that not more than 25 million bushels of 1943-crop corn will be placed under loan because of the favorable market conditions.

Rye

Loans were made on 5.3 million bushels of rye during the fiscal year 1943 at an average loan rate of about 60 cents per bushel at the farm. Loans on 1.5 million bushels had been redeemed by the end of the fiscal year, with only 2 thousand bushels being delivered to Corporation and the remainder in process of liquidation. Loans are available on the 1943 crop at the rate of 75 cents per bushel. By November 20, 1943, 125,579 bushels had been placed under loan. Owned stocks of rye totaled 551,000 bushels on June 30, 1943.

Barley

Loans were made on 15-1/4 million bushels of barley during the fiscal year ending June 30, 1943 at a loan rate of approximately 54 cents a bushel at the farm, with 10 million bushels being redeemed by producers, 135 thousand bushels being delivered to the Corporation, and the remainder in process of liquidation at the end of the fiscal year. The loan rate on 1943 barley is 75 cents per bushel for No. 1 barley in states east of the Rocky Mountains and 80 cents per bushel in states west of the Rockies and 630,223 bushels were under loan on November 20, 1943. Owned stocks of barley totaled 575,000 bushels on June 30, 1943.

Grain Sorghums

Loans were completed at an average loan rate of 54 cents per bushel at the farm on 88 thousand bushels of 1942-crop grain sorghums during the fiscal year 1943. By June 30, 1943, 79 thousand bushels had been redeemed and the remainder was in process of liquidation with no grain sorghums being delivered to the Corporation. Loans are available on 1943-crop grain sorghums at 85 cents per bushel for No. 2 grades or better in all states except Arizona and California, where the loan rate is 90 cents per bushel at the farm. By November 20, 3,418 bushels were under loan.

Grain Bin Sales Program

Wooden grain bins having a storage capacity of approximately 156 million bushels were purchased by Commodity Credit Corporation during the fiscal year ending June 30, 1943. These bins were offered for sale to farmers, and during the summer of 1942 bins having a storage capacity of about 30 million bushels were sold. The sale of bins increased during 1943, and it is estimated that by October 31, an additional 15 thousand bins having a storage capacity of approximately 35 million bushels had been sold to farmers. The sales price of the bins represents cost, plus freight and handling charges.

Grain Blowers, Elevators, and Removers

During the fall of 1942 and the spring of 1943, it was necessary for Commodity Credit Corporation to purchase 1,747 grain blowers, elevators and removers at a cost of $238,209.35 for use in placing and removing grain in bins owned by the Corporation. As the harvest of the 1943 grain crop approached, farmers were unable to purchase necessary equipment for their own use. About 800 of the blowers, elevators, and removers owned by the Corporation were of a size adaptable to farm use so arrangements were made to sell this equipment to farmers at a price which would cover the cost of the equipment, plus freight and handling charges.

Grain Alcohol Program

During the fiscal year ending June 30, 1943, 24 million bushels of corn at an average price of 88 cents per bushel and 65 million bushels of wheat at an average price of 90 cents per bushel were sold to distillers for production of industrial alcohol for use in the manufacture of munitions, synthetic rubber and other war industrial purposes. Of this quantity 35 million bushels of wheat were sold as whole wheat direct to distilleries and 30 million bushels were shipped to flour millers for processing into granular flour or grits for reshipment to distilleries. The processing of granular flour resulted in a byproduct of approximately 350 thousand tons of millfeed.

The sale of Government-owned stocks of corn to distilleries was discontinued on March 31, 1943. Wheat sales at less than parity prices were discontinued on June 30, 1943. A small additional quantity of wheat was supplied to distilleries at parity prices during the period from July 1 through July 8, 1943, in order to allow the grain trade a reasonable time in which to get stocks of market grain into position to serve the distilling industry. The grain alcohol program ended on July 8, 1943.

Seed Purchase Program

With military requirements curtailing the quantity of nitrate that could be made available for agricultural use, it was essential that leguminous winter cover crops be used to replace nitrogen in the soil. Normally a very large percentage of cover crop seeds are procured from European areas, but these sources have been cut off by the war.

In order to assure a supply of cover crop seeds for the southeastern area of the United States, Commodity Credit Corporation purchased 5½ million pounds of Austrian winter peas, hairy vetch, and ryegrass seed of the 1942 crop. This seed was sold to the Agricultural Adjustment Agency to be distributed to farmers in the Southern and East Central Regions for carrying out soil-building practices.

Tobacco

Flue-cured tobacco: During the fiscal year ended June 30, 1943, Commodity Credit Corporation purchased 218.2 million pounds, redried weight, of flue-cured tobacco, nearly 1/3 of the 1942 crop, at a cost of approximately $110,000,000. Sales for lend-lease amounted to 272.7 million pounds during the fiscal year, reducing the Corporation's inventory to 166.4 million pounds by June 30, 1943, approximately 54.5 million pounds less than the inventory at the beginning of the fiscal year 1943.

Through October 31, 1943, Commodity Credit Corporation had purchased 206 million pounds (green weight) of 1943-crop flue-cured tobacco at a cost of $86,000,000, and it is estimated that total purchases during the fiscal year 1944 will amount to 258.5 million pounds in order to supply military and minimum civilian requirements in the British Empire. Approximately two-thirds of the shipments to the British will be for cash, the remainder being financed through lend-lease.

Dark tobacco: During the fiscal year 1943, Commodity Credit Corporation purchased for lend-lease purposes 3.1 million pounds, redried weight, of dark tobacco, and made loans through cooperative associations for market support purposes on 10.8 million pounds. Sales, redemptions and releases for lend-lease during the fiscal year totaled 22.9 million pounds, leaving an inventory at the end of the fiscal year of 27.5 million pounds, 9 million pounds less than the inventory at the beginning of the fiscal year. A small quantity of 1943-crop dark tobacco will be purchased for lend-lease purposes, and loans at 90 percent of the parity price will be available.

Burley tobacco: Price supporting loans at 90 percent of the parity price were offered during the fiscal year 1943 through cooperative associations, but no loans were made because the market prices were above the loan rates. Loans at 90 percent of the parity price will be available during the fiscal year 1944, and a small quantity of burley tobacco will be purchased for lend-lease purposes.

Cigar leaf tobacco: Price supporting loans at 90 percent of the parity price were offered during the fiscal year 1943 through cooperative associations in Ohio and Wisconsin, but were not used because market prices were above the loan rates. Loans at 90 percent of the parity price will be available during the fiscal year 1944.

Gum Naval Stores

Commodity Credit Corporation made loans totaling nearly 5½ million dollars on 345,577 metal drums of rosin, and loans totaling over 4 million dollars on 152,480 barrels of turpentine, under the 1942 loan program. Loans on 1,107 drums of rosin and 487 barrels of turpentine were repaid, with practically all of the remainder being purchased by the Corporation. Commodity Credit Corporation stocks of turpentine on June 30, 1943, amounted to 188,000 barrels, and stocks of rosin were 754,000 barrels and drums.

Under the 1943 loan and purchase program producers can secure loans on turpentine and rosin at 90 percent of parity, or can sell turpentine and rosin to the Corporation at a price based on 95 percent of parity, but naval stores once pledged are not thereafter eligible for purchase. By November 30, 1943, loans under this program had been advanced on 6,026 metal drums of rosin and 88 barrels of turpentine, and purchases accounted for 37,342 metal drums of rosin and 84,390 barrels of turpentine. Market prices of turpentine and rosin are now well above the support prices, and account for acquisition of smaller quantities under the 1943 program. There has been a net reduction in Commodity Credit Corporation stocks of 477,922 drums since January 1, 1943, with indications of a further substantial reduction of Commodity Credit Corporation holdings.

General Commodities Purchase Program

The General Commodities Purchase Program was inaugurated in March 1941, for the purchase of agricultural commodities for lend-lease, Army, Navy, Red Cross, and territorial uses. Purchases are made by the Federal Surplus Commodities Corporation acting as agent for the Commodity Credit Corporation, and sales are made to the requisitioning agencies. Disburesments through October 31, 1943, amounted to over $3,160,000,000, including dairy and poultry products, meats, fish, fats and oils, fruit and fruit products, vegetables grain and cereal products, seeds, soybeans and products, vitamins, miscellaneous foods, and other commodities. Collections through October 31, 1943 amounted to over $2,700,000,000. In addition to this program stocks of Government-owned cotton, wheat, tobacco, naval stores and other commodities were made available for lend-lease operations.

Alaska Spruce Log Program

The Alaska Spruce Log Program is carried out in cooperation with the Forest Service to help maintain the supply of logs available and suitable for cutting airplane grade lumber by logging selected spruce timber in Alaska and transporting the logs in rafts to Puget Sound for sale to the mills that are equipped to cut this class of material. Logging is carried on in the Tongas National Forest in Alaska and all operations are under the supervision of the Regional Forester at Juneau, Alaska.

By November 1943, nearly 17 million board feet of high grade spruce logs had been delivered or were en route to the Puget Sound area for milling or in rafts ready to be moved; and approximately 15 million board feet were in various stages of being logged. In addition over 14.9 million board feet of hemlock and lower grade spruce logs had been sold to mills in Alaska for cutting into lumber needed by the Army and Navy, with about 16 million board feet being logged.

Oilseeds Program

With the entrance of the United States into the war in December 1941, and the subsequent loss of most of our imports from the Far East, the fats and oils situation was transformed from one of comparative abundance to one of tight supply. Production of fats and oils was increased about 10 percent in the 1942 crop year, but requirements mounted even more. During the fiscal year 1943, Commodity Credit Corporation carried out programs involving prices, marketing, and processing of soybeans, peanuts, cottonseed and flaxseed.

The primary purposes of these programs were to protect prices to farmers and induce an increase in the production of the oil crops, to preserve ceiling prices established by the Office of Price Administration on vegetable oil products, to make soybean, cottonseed, peanut and linseed meals available to livestock producers as an aid in promoting the increased production of livestock products, and to assure the maximum utilization of processing facilities.

In its over-all vegetable oils program, Commodity Credit Corporation operates through purchases and sales of oilseeds products. The Corporation makes contracts with processors, who agree to pay not less than the support prices to producers of soybeans, peanuts, flaxseed, and cottonseed, and agrees to purchase products at announced prices in order to protect them against serious market declines. In some instances where soybeans have been sold to processors outside of the Corn Belt, title to some of the oilseed meal and cake is retained by the Corporation, and the commodity is shipped to deficit feed areas for sale to feeders.

Soybeans: During the fiscal year 1943, Commodity Credit Corporation made loans on the 1942 crop at an average rate of $1.60 per bushel on approximately 3-1/4 million bushels of farm-stored soybeans, of which 1-1/4 million bushels had been redeemed by June 30, with redemptions being continued. Commodity Credit Corporation also purchased about 30 million bushels of soybeans, of which 16 million bushels had been sold for crushing by the end of the fiscal year.

Loans are available on 1943 crop farm-stored No. 2 yellow and green soybeans at $1.80 per bushel, and the Corporation will enter into contracts with processors and handlers to assure the payment of not less than the support prices to the producers of soybeans. 30,040 bushels were under loan by November 20, 1943.

Peanuts: Towards the end of the fiscal year 1943, Commodity Credit Corporation took over from the Food Distribution Administration the liquidation of the 1942 peanut marketing program. Under this program peanuts had been purchased at prices ranging from $130 to $140 per ton for "quota" peanuts and $80 per ton for "excess" peanuts. An additional payment of $10 per ton was subsequently made to producers of "excess" peanuts and a third payment will be made in the very near future.

Marketing quotas and acreage allotments for 1943 crop peanuts were revoked June 12, 1943 and Commodity Credit Corporation was designated as the sole purchaser of 1943 crop farmers' stock peanuts other than those used for planting in 1944 or processed by growers on the farm where produced and sold direct to the consumer. Prices per ton will average about $140 per ton for Spanish and Virginia types and $130 per ton for the Runner type, with differentials for grade. There will be no "quota" and "excess" peanuts in the 1943-44 marketing year. Peanuts purchased by Commodity Credit Corporation will be sold for crushing at around $90 per ton and for the edible market at prices averaging approximately $154 per ton for Runner type, $168 to $176 Virginia type, and $169 for Spanish type peanuts.

Cottonseed: Prices of cottonseed to producers were supported at $49 and $50 per ton during the 1943 fiscal year by contracts with processors, who agreed to pay not less than the minimum support prices for the cottonseed. On July 30, 1943, it was announced that 1943 crop cottonseed will be supported at $55 per ton in Oklahoma, Texas, and New Mexico and $56 per ton elsewhere. These price supports will be carried out by an open offer of Commodity Credit Corporation to purchase cottonseed products at specified prices from processors who pay support prices for the cottonseed.

Linseed: In addition to the loan program on flaxseed, Commodity Credit Corporation through its flaxseed price-supporting contracts with processors also made loans on 16 million pounds of linseed oil, all of which had been redeemed by the end of the fiscal year.

Cottonseed, peanut, and soybean oil: In order to implement the price-supporting contracts with processors of cottonseed, peanuts and soybeans and to maintain price ceilings established under the Emergency Price Control Act on vegetable oil products, Commodity Credit Corporation entered into contracts with vegetable oil refiners under which refiners purchased crude oil for the account of Commodity Credit Corporation from oilseed processors at the ceiling prices established therefor and repurchased such oil from the Corporation at ½ cent per pound lower price.

Hemp

Prior to the war the United States depended on the Philippines and other far eastern countries for about 98 percent of its supply of abaca, and most of its supply of other hard fibers. The cutting off of these sources of supply by the Japanese, together with the increased need of the armed forces for such materials, made it extremely desirable that a domestic supply of hemp, the most satisfactory substitute, be developed.

During the calendar year 1943, Commodity Credit Corporation purchased about 225,000 bushels of hempseed from domestic growers at the support price of $8 per bushel. Contracts were signed with producers for the planting of nearly 175,000 acres of hemp for fiber in 1943, and the seed was furnished by Commodity Credit Corporation with the cost to be charged against payments due producers when the hemp is purchased. Total production of hemp for fiber, including private plantings, is expected to total about 120 million pounds, about half line fiber, and the balance tow. In addition to the acreage planted for hemp fiber, about 61,000 acres were planted for seed in Kentucky, which is expected to provide ample seed for 1944 plantings.

In order to process the straw, 42 hemp mills are being constructed by Defense Plants Corporation, to be operated by War Hemp Industries, Inc., as agents of Commodity Credit Corporation. Two of the mills, at Polio, Illinois, and Winchester, Kentucky, were in operation by October 31, 1943, and most of the remaining mills were nearing completion.

Hemp-harvesting equipment is being rented to producers by Commodity Credit Corporation, and the contracts provide that the Corporation will purchase the straw at the mills at prices ranging from $30 to $50 per ton, depending on the grade. Harvest of the straw started about September 1, and 1.3 million pounds of straw had been purchased by October 31.

Because of improved shipping conditions it has been possible to import larger supplies of hard fibers from Latin America, and it is probable that it will be possible to reduce the domestic acreage devoted to hemp in 1944.

Rice

Loans are available on the 1942 crop of rice at 90 percent of parity pursuant to Public Law 729, 77th Congress. Market prices remained well above the support prices and no loans were made. Loans on 1943 crop rice at 90 percent of parity will be available if needed.

Foreign Purchase Program

Under the foreign purchase program initiated in June 1942, Commodity Credit Corporation purchased agricultural commodities from foreign countries friendly to the United States. Commodities were imported for allocation and distribution for military, essential civilian or lend-lease use. In some instances commodities are stockpiled in the country of origin, or are purchased for the account of Allied or friendly nations for direct delivery without transshipment to the United States. The program was carried out in cooperation with the Foreign Economic Administration, the War Production Board, and the Department of State with respect to policies regarding the purchase and importation of commodities.

By Executive Order 9385, dated October 6, 1943, the functions of the War Food Administration including Commodity Credit Corporation in connection with the procurement and development of food, food machinery, and other food facilities in foreign countries, were transferred to the Foreign Economic Administration, effective January 1, 1944, with the exception of authority to issue directives and make suggestions regarding purchases, and functions in connection with Caribbean Sugar and Canadian food.

Coffee: In order to assure proper utilization of available shipping space and equitable distribution of coffee in the United States, all coffee imports were made by dealers under import licenses issued by Commodity Credit Corporation. All import contracts in force on July 2, 1942, were taken over by Commodity Credit Corporation, and under the Purchasing Agent Agreement, importers handling coffee acted as agents of the Corporation.

Commodity Credit Corporation absorbed excess ocean and transshipment costs on imported coffee, but improvement in the shipping situation ended the need for these payments which were discontinued on coffee contracted for import after August 25, 1943. Cumulative purchases of coffee through October 31, 1943, amounted to 683 million pounds, including 75 million pounds purchased and stored in Brazil.

Sugar (foreign): On December 16, 1942, Commodity Credit Corporation took over from Defense Supplies Corporation the administration of the 1942 Cuban Crop Purchase Contract under which approximately 1.7 million tons of sugar were purchased. Under the 1943 Cuban Crop Contract the Corporation is purchasing 3 million tons of raw sugar of which over 2.1 million tons had been purchased by October 31, 1943. On August 21, 1943, it was announced that an agreement had been reached for the purchase of 4 million tons of 1944-crop Cuban sugar.

Through October 31, 1943, Commodity Credit Corporation had also purchased 321,000 tons of 1943-crop sugar from the Dominican Republic under an agreement to purchase 440,000 tons from the 1943 crop and a minimum of 440,000 tons from the 1944 crop of Dominican sugar. Commodity Credit Corporation also agreed to purchase 35,000 tons of 1943-crop Haitian sugar, of which 27,000 tons had been purchased by October 31, 1943, and a minimum of 38,000 tons of 1944-crop raw sugar from the Republic of Haiti. A small quantity of sugar has also been purchased from Peru.

In addition to these purchases, the Corporation, acting as agent for the Lend-Lease Administration, acquired -- under "reverse lend-lease" -- approximately 70,000 tons of Fiji Island and Australian sugar from the British Ministry of Food, through October 31, 1943.

Fats and oils: Cumulative purchase of foreign-produced fats and oils through October 31, 1943 amounted to over a million tons, including such fats, oils and oil-bearing commodities as castor oil, copra, corn, cottonseed, peanut and sunflower oil, linseed oil, palm oil, rapeseed oil, babassu kernels, castor seed, cohune oil, neatsfoot oil, glycerine, murumuru kernels, tucum nuts, cashew kernels and ouricury nuts. Many of these fats and oils have particular qualities or characteristics which make them critically essential to the war effort, and in some cases substitution is extremely difficult or impossible.

Other foreign commodities: Other foreign commodities purchased through October 31, 1943, included 275 million pounds of cocoa, 81 million pounds of tea, 1 million gallons of alcohol, and quantities of cotton, flax, glycerine, livermeal, pyrethrum, rice, rotenone, loofa sponges, and whale guano. Total cost of all foreign commodities purchased by Commodity Credit Corporation through October 31, 1943, amounted to 533 million dollars, including transportation, storage, insurance and other handling charges.

Other Commodities

Among the other commodities on which Commodity Credit Corporation operated loan or purchase programs during the fiscal year 1943, are the following:

Castor bean seed: During the fiscal year 1943 Commodity Credit Corporation purchased 2 million pounds of castor bean seed (weight in hull) which, when hulled, amounted to slightly less than a million pounds. Of this quantity, 106,000 pounds were sold to farmers for planting the 1943 crop, about 76,000 pounds were sold to the Government of Mexico, 761,000 pounds were sold to oil mills, and less than 1,000 pounds used for experimental purposes. Growers have been assured a price of 6 cents per pound for castor beans of the 1943 crop having a shelling percentage of 70. It is estimated that about 7,000 acres or about 4 million pounds of castor beans (weight in hull) will be harvested from the 1943 crop.

Fiber flax: Loans were made to two producers' cooperative associations for the construction of fiber flax processing plants in the Pacific Northwest, and for the purchase of successive crops of fiber flax straw from the producers. Construction of the plants has been completed and the 1942 and 1943 crops of fiber flax straw, amounting to about 7,500 tons, have been purchased from the producer members of the associations.

Peanut bags: Nearly 2½ million peanut bags were purchased for use in storing the 1942 crop of peanuts in the South Central States. About two-fifths of the bags had been sold prior to November 30, 1943.

Olive oil: A loan program on olive oil was announced in order to encourage maximum production of olives for oil and to provide a market for olives which could not be handled by the edible trade because of a lack of canning materials. Loans were made on about 123,000 gallons of olive oil, all of which had been redeemed by October 31.

Potatoes: Price supporting loans were announced on 1942-crop potatoes, but no loans were made because the market prices remained above the loan rate. Production of white potatoes in 1943 is estimated to be 469 million bushels, or 26 percent larger than the 1942 crop and price supporting loan and purchase programs have been announced in 1943-crop potatoes. Loan rates on potatoes range from $1.70 to $1.90 per hundred pounds through November, 1943, with an increase of 20 cents per hundred pounds effective December 1, and a further increase of 10 cents per hundred pounds effective January 1, 1944. The purpose of the increasing support prices is to encourage storage of the potatoes so as to assure an adequate distribution throughout the marketing year. Through October 31, 1943, loans had been made on nearly 5.5 million pounds of white potatoes.

Sweetpotatoes: Loans are available on 1943-crop sweetpotatoes at $1.15 per bushel through November 30, and $1.30 per bushel through December 31, 1943, and on kiln-dried sweetpotatoes at $1.50 per bushel during January 1944 and $1.65 per bushel beginning February 1. Little activity is expected under this program since prices have remained well above the support levels.

Butter and cheese: A total of 41 million pounds of butter and 10½ million pounds of cheese was purchased under the 1941-42 Dairy Products Purchase Program, nearly all of which has been liquidated through sales to the armed forces, lend-lease, Red Cross and other war users. Under the 1943-44 butter and cheese purchase program, initiated April 26, 1943, purchases of nearly 183 million pounds of butter and 144 million pounds of cheese had been completed by October 31, 1943, of which 69 million pounds of butter and 95 million pounds of cheese had been sold by that date.

Pyrethrum seed: A small quantity of pyrethrum seed suitable for domestic and South American cultivation was purchased from the 1942 crop for planting in 1943. Purchases will again be made from the 1943 crop.

Peanut seed: In order to induce increased production of peanuts, 162 million pounds of peanut seed was purchased for distribution to growers for planting the 1942 crop. Peanuts not sold as seed were sold for crushing into oil.

Peanut equipment: In order to help handle the increased production of peanuts, 18 peanut warehouses were constructed by the G.F.A. Peanut Producers Cooperative Association with funds loaned by Commodity Credit Corporation. In addition, over 4,000 peanut pickers were purchased for sale to producers for use in harvesting. Purchases and sales of peanut pickers are continuing.

Dairy cattle: During the fiscal year 1943 nearly 34,000 head of dairy cattle were purchased in cooperation with the Farm Security Administration for resale to farmers whose labor force and feed supplies were adequate to care for the animals. By October 31, 1943, about 27,000 animals had been sold. Since June 30, the program has been restricted to purchases and sales of heifers and the sale of cows remaining on hand from previous purchases. No purchases have been made since August 31, 1943.

Cheddar cheese: A purchase and sale program on Cheddar cheese was announced in order to support the price to producers of milk sold for the manufacture of cheese, and to prevent large quantities of milk from being diverted to other uses. 631 million pounds had been purchased and sold by October 31, 1943, at a total loss to Commodity Credit Corporation of about $24,000,000.

Wool: Because of an unusually large stock pile of foreign wool, the 1943 wool purchase program was announced to protect prices to domestic producers and to maintain production of wool and lambs. Through October 31, 1943 a total of 207 million pounds of shorn wool and nearly 18 million pounds of pulled wool had been purchased. It is estimated that purchases of wool during 1943 will total 240 million pounds.

Dry edible beans and peas: Purchase prices for dry edible beans range from $6.50 to $7.50 per hundred pounds for No. 1 beans of various classes with discounts of 15 cents per hundred pounds for No. 2 beans, and 40 cents per hundred pounds for No. 3 beans. In addition loans are available on thresher run beans at $5.50 per hundred pounds for No. 1 beans with discounts for lower grades. Approximately 2 million pounds of 1943 crop peas and 3 million pounds of beans were under loan on November 20, 1943. Support prices have also been announced on blackeye peas and smooth dry edible peas.

Canning vegetables: Support prices have been announced on canning vegetables, (snap beans, lima beans, sweet corn, tomatoes, etc.) and purchases will be made at the support prices with sale at prices that will permit sale to consumers at ceiling prices. Payments through November 31 totaled approximately $6,500,000.

Milkweed floss: Milkweed floss is the only known domestic substitute for kapok for use in airplane insulation and life preservers. In view of the limited supply of kapok, Commodity Credit Corporation is undertaking a program to obtain 10 million pounds of milkweed floss during 1943, 1944 and 1945. This floss will be processed by Commodity Credit Corporation and sold to Defense Supplies Corporation at cost for allocation to war uses. Purchases through October 31, 1943 totaled over 1 million pounds.

Hay and pasture seed: In order to induce the harvesting of sufficient seed for planting in 1944, Commodity Credit Corporation has announced loans on alfalfa, sweetclover, timothy, orchard grass, bermuda grass, and other hay and pasture seed, stored in approved warehouses. Loans will mature on demand but not later than April 30, 1944. Loans had been completed on nearly 174,000 pounds through November 20, 1943.

Sugar (domestic): Commodity Credit Corporation is supporting the price of 1943-crop sugar beets at $1.50 per ton above the 1942 price levels, and has agreed to absorb part of the transportation costs if it should become necessary to ship beet sugar from western refineries to the East. Prices of 1943-crop Louisiana sugar cane are being supported by payments of 33 cents per ton, to offset increased harvesting costs, and as an inducement for increased production in 1944, it has been announced that prices of 1944-crop Louisiana sugar cane will be supported at 85 cents per ton above 1942 levels. The Corporation has also agreed to guarantee a minimum net return to West Coast sugar refineries for refined sugar sold, in order to assure distribution to deficit areas, and to absorb part of the transportation and transshipment costs on refined offshore sugar.

An agreement was entered into between Commodity Credit Corporation and the Virgin Islands Company whereby the Corporation agreed to loan up to $210,000 on 1942 crop carry-over and 1943-crop sugar as it is produced. The Corporation has also agreed to purchase approximately 650,000 tons of 1943-crop Puerto Rican sugar.

Hay for drought states: Under an agreement between Commodity Credit Corporation and the Southern States Cooperative Association, legume hay will be purchased in surplus producing areas and by means of sales to local dealers will be made available to dairy farmers in the drought areas of Delaware, Maryland, Virginia, West Virginia and North Carolina, in order to maintain milk production in those areas. The difference between cost and selling price will be paid by Commodity Credit Corporation. The Corporation is also making feed wheat and corn available in these areas, and has negotiated the purchase of 40,000 tons of cottonseed meal for importation from Brazil which will be allocated for sale to farmers throughout the Atlantic States.

Fluid milk and dairy feed: At the time the President's "Hold-the-Line" order was issued on April 8, 1943, commitments had already been made to increase the prices paid to producers in certain milk-marketing areas. In order that these commitments could be carried out without violating the "Hold-the-Line" order, a fluid milk program was initiated on April 15, 1943. The producer prices were increased, and dealers in the Washington, Arlington-Alexandria, Baltimore, Philadelphia and suburbs, Wilmington, Omaha-Council Bluffs, and certain Pennsylvania milk-marketing areas, received payments on sales of bottled milk averaging around ½ cent per quart. Following an increase of 20 cents per hundredweight in the producer price of milk in the New York milk-marketing area, the program was extended to that area. Previous programs which had been operated in the New York, Chicago and Duluth-Superior milk-marketing areas in the fall of 1942 had been discontinued on January 1, 1943. Total payments on all programs of this type through October 31, 1943 amounted to slightly more than $4,700,000.

By the end of September 1943, the price of feeds had risen to a point in relation to the prices received by farmers for daily products that a curtailment of the production of dairy products would normally have been expected. In order to offset the increased feed costs and to prevent a drop in the production of dairy products, the dairy feed payment program was announced. An allocation of $1,800,000 for expenses incurred in carrying out this program was made available to the War Food Administration from the President's Emergency Fund, of which $1,750,000 has been allotted to the Agricultural Adjustment Agency for the months of October, November and December, 1943. Under this program payments of from 30 to 50 cents per hundredweight are made to producers for the quantity of milk sold during the period the program is in effect, with corresponding payments on cream and butterfat. Payments were begun November 1 on milk sold by farmers through October 31, and a second payment will be made after December 31, 1943 for milk sold during the months of November and December.

UNITED STATES DEPARTMENT OF AGRICULTURE
COMMODITY CREDIT CORPORATION

STATEMENT OF LOANS AND COMMODITIES OWNED
SEPTEMBER 30, 1943

	TOTAL LOANS MADE 1/		LOANS OUTSTANDING 3/	
	Quantities Pledged	Face Amount 2/	Total Loans Outstanding	Collateral Pledged
Agricultural Supplies Program				
Agricultural Supplies	-	$ 9,703,259.75	$ 3,709,533.82	-
Barley Loans	Bushels			Bushels
1941 Barley	16,299,643	$ 6,863,074.18	$ 23,142.15	41,464
1941 Barley Resealed	2,007,418	870,547.16	23,444.74	54,284
1942 Barley	15,258,980	8,185,379.20	2,207,387.92	4,228,282
1943 Barley	252,376	181,504.71	181,504.71	252,376
Other Loans Outstanding 4/	-	-	1,144.69	3,450
Total			$ 2,436,624.21	4,579,856
Corn Loans	Bushels			Bushels
1938-39 Corn Resealed	200,810,589	$131,303,033.67	$ 254,218.00	374,077
1940 Corn	103,253,472	62,915,274.01	899,614.64	1,463,899
1941 Corn	110,994,205	81,003,281.57	2,226,554.17	2,812,647
1942 Corn	56,521,236	43,697,272.53	1,800,159.13	2,404,655
Other Loans Outstanding 4/	-	-	2,887.41	8,148
Total			$ 5,183,433.35	7,063,426
Cotton Loans	Bales			Bales
1941 Cotton	2,220,843	$163,327,529.91	$ 29,647,654.67	440,271
1942 Cotton	3,144,264	275,025,810.15	170,180,889.46	2,045,241
1943 Cotton	189,068	18,370,833.50	18,379,891.98	189,068
Other Loans Outstanding 4/	-	-	13,726.74	291
Total			$218,222,162.85	2,674,871
Flaxseed Loans	Bushels			Bushels
1941 Flaxseed	746,204	$ 1,245,179.53	$ 2,353.64	1,397
1942 Flaxseed	1,577,895	3,467,805.47	440,042.42	189,405
1943 Flaxseed	206,785	559,980.58	559,980.58	206,785
Total			$ 1,002,376.64	397,587
Foreign Purchase Loans				
1942 Foreign Purchases	-	$ 7,509,955.60	$ 4,485,158.97	-
Grain Sorghums Loans	Bushels			Bushels
1941 Grain Sorghums	340,862	$ 117,246.85	$ 139.54	347
1942 Grain Sorghums	123,507	66,637.59	2,462.42	3,976
Total			$ 2,601.96	4,323
Hay and Pasture Seeds Loans	CWT			CWT
1943 Hay and Pasture Seeds	1,616	$ 18,092.07	$ 18,092.07	1,616
Pea Loans	CWT			CWT
1943 Peas	912	$ 4,104.00	$ 4,104.00	912
Rye Loans	Bushels			Bushels
1941 Rye	2,459,344	$ 1,223,800.32	$ 4,590.37	9,102
1941 Rye Resealed	602,382	300,663.26	8,037.33	15,979
1942 Rye	5,292,645	3,163,051.40	1,326,121.11	2,221,786
1943 Rye	63,283	47,352.79	47,352.79	63,283
Other Loans Outstanding 4/	-	-	3,389.15	7,817
Total			$ 1,369,490.75	2,317,967
Tobacco Loans	Pounds			Pounds
1940 Dark Tobacco	42,541,364	$ 3,819,236.36	$ 21,037.07	513,090
1941 Dark Tobacco	9,664,545	1,649,704.94	639,283.38	2,902,330
1942 Dark Tobacco	10,826,034	2,443,089.31	2,013,435.00	7,967,689
Total			$ 2,673,755.45	11,383,109

	TOTAL LOANS MADE 1/		LOANS OUTSTANDING 3/	
	Quantities Pledged	Face Amount 2/	Total Loans Outstanding	Collateral Pledged
Naval Stores Loans	Barrels			Barrels
1942 Turpentine	152,480	$ 4,177,341.08	$ 576.46	24
1938-1942 Rosin	2,608,340	30,524,235.38	3,391,193.18	288,047
Total			$ 3,391,769.64	288,071
Wheat Loans	Bushels			Bushels
1941 Wheat Resealed	40,972,578	$ 37,699,698.66	$ 1,003,450.94	1,016,608
1942 Wheat	405,484,560	458,251,708.59	103,580,687.97	87,239,568
1943 Wheat	77,089,548	97,849,891.91	97,759,381.26	76,839,918
Other Loans Outstanding 4/	-	-	293,390.97	280,834
Total			$202,636,911.14	165,376,928
Total Commodity Loans			$445,156,014.85	

COMMODITIES OWNED BY COMMODITY CREDIT CORPORATION

Commodity	Quantity 5/	Book Value
Agricultural Supplies	-	$ 170,446,184.49
Barley	351,285 Bushels	196,016.53
Beans	471,599 Pounds	26,453.57
Cotton	2,752,849 Bales	172,406,259.97
Dairy Products	-	1,051,022.05
Foreign Purchases	-	213,919,858.58
Rye	400,266 Bushels	265,470.20
Tobacco	232,636,983 Pounds	114,325,889.02
Wheat	161,924,919 Bushels	206,948,161.98
Other Commodities	-	10,423,061.73
Total		$ 890,008,378.12

NOTES

1/ - Excludes inactive programs. Includes loans made directly by Commodity Credit Corporation and guaranteed loans made by private lending agencies.

2/ - Storage advances are excluded.

3/ - Includes loans held by Commodity Credit Corporation and by private lending agencies.

4/ - Represents inactive loan programs in process of final liquidation.

5/ - Includes commodities in process of sale.

UNITED STATES DEPARTMENT OF AGRICULTURE
Commodity Credit Corporation
B A L A N C E S H E E T
As of September 30, 1943

ASSETS

Cash		$ 143,941,585.18
Loans Receivable		222,445,075.61
Accounts Receivable		373,053,575.09
Inventories:		
Commodities Owned	$884,654,982.28	
Accrued Charges on Commodities Owned	5,353,395.84	890,008,378.12
Fixed Assets		26,650,640.21
Undistributed Debits		2,331,513.17
Deferred Charges and Prepaid Expenses		2,095,973.71
TOTAL ASSETS		$1,660,526,741.09

LIABILITIES

Guaranteed Obligations of the United States:		
Notes Payable	$1,111,596,000.00	
Bank Loans Payable	186,684,096.46	$1,298,280,096.46
Accounts Payable		274,681,881.18
Contingent Liabilities	($246,843,764.91) a/	
TOTAL LIABILITIES		$1,572,961,977.64

NET WORTH

Capital Stock	$100,000,000.00	
Deficit	(12,435,236.55)	87,564,763.45
TOTAL LIABILITIES AND NET WORTH		$1,660,526,741.09

a/ Loans held by Private Banks $227,273,341.62
Applications for Letters of Credit 19,570,423.29
$246,843,764.91

AGRICULTURAL ADJUSTMENT AGENCY

(a) Conservation and Use of Agricultural Land Resources

Appropriation Act, 1944	$400,000,000
Budget estimate, 1945	250,000,000 1/
Decrease	-$150,000,000

1/ In addition to the direct appropriation of $250,000,000 for 1945, the estimates contemplate the transfer of not to exceed $40,000,000 from the funds made available by section 32 of the Act entitled "An Act to amend the Agricultural Adjustment Act, and for other purposes," approved August 24, 1935.

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease	
1. Payments to farmers	$400,814,600	$368,257,408	$264,285,395	-$103,972,013	(1)
2. Expenses of county agricultural conservation associations	32,095,321	19,509,000	16,300,000	- 3,209,000	(2)
3. Administrative expenses, AAA	9,989,358	10,403,281	8,667,360	- 1,735,921	(3)
4. Allotments and transfers to other agencies (as shown in Budget schedules)	1,386,223	1,830,311	747,245	- 1,083,066	(4)
Total obligations, Agricultural Conservation Program	444,285,502	400,000,000	290,000,000	- 110,000,000	
Covered into Treasury in accordance with Public Law 674	+164,240	-	-	-	
Total available	444,449,742	400,000,000	290,000,000	- 110,000,000	
Transfer from "Exportation and domestic consumption of agricultural commodities"	-	-	-40,000,000	- 40,000,000	
Transfers in estimates to other appropriations (as shown in Budget Schedules)	+5,550,258	-	-	-	
Total estimate or appropriation	$450,000,000	$400,000,000	$250,000,000	-$150,000,000	

INCREASES OR DECREASES

The decrease of $150,000,000 in this item for the fiscal year 1945 is offset to the extent of $40,000,000 by the transfer of that sum from the appropriation provided by section 32 of the Act of August 24, 1935, resulting in a net decrease of $110,000,000 in working funds. This decrease in working funds consists of :

(1) A net decrease of $103,972,013 in payments to farmers participating in agricultural conservation programs composed of:

(a) An estimated decrease of $191,162,000 in production adjustment payments. No production adjustment payments will be made in connection with the 1944 Agricultural Conservation Program.

(b) An estimated increase of $75,572,065 in production conservation practice payments. The emphasis upon conservation practices is in accordance with the directive from the Congress, which included in the Department of Agriculture Appropriation Act, 1944, authority for formulating a 1944 Agricultural Conservation Program. The increase in funds for production conservation practices will result in approximately $50,000,000 being available for increased performance of practices, approximately $20,000,000 for increase in practice rates, and approximately $5,000,000 for an increased amount required for small payments.

(c) A decrease of $18,174,109 in the amount borrowed from the Commodity Credit Corporation under authority of section 391(c) of the Agricultural Adjustment Act of 1938, as amended. It is not contemplated that any loan will be made from the Commodity Credit Corporation during the fiscal year 1945 for the purchase of conservation materials and services under section 8 of the Soil Conservation and Domestic Allotment Act, as amended.

(d) An increase of $6,556,187 in funds available for production conservation practices since none of the 1945 appropriation will be used to repay loans from the Commodity Credit Corporation. The sum of $6,556,187 was repaid the Commodity Credit Corporation out of the 1944 appropriation for loan made during the fiscal year 1943. No loans from Commodity Credit Corporation will be repaid out of the 1945 appropriation since the borrowing in the fiscal year 1944 will be limited to the amount which can be repaid out of unobligated balances of appropriations for prior years.

(2) A decrease of $3,209,000 in expenses of county agricultural conservation associations in carrying out the agricultural conservation programs.

(3) A decrease of $1,735,921 in administrative expenses of the Agricultural Adjustment Agency in administering the agricultural conservation programs.

(4) A decrease of $1,083,066 in allotments and transfers to other agencies cooperating in the agricultural conservation programs.

CHANGES IN LANGUAGE

The estimates include proposed changes in the language of this item as follows (new language underscored; deleted matter enclosed with brackets):

Change No.

1 [To] For all expenses necessary to enable the Secretary to carry into effect the provisions of sections 7 to 17, inclusive, of the Soil Conservation and Domestic Allotment Act, approved February 29, 1936, as amended (16 U.S.C. 590g-590q), and the provisions of the Agricultural Adjustment Act of 1938, as amended (7 U.S.C. 1281-1407) (except the [making of payments pursuant to sections 303 and 381] provisions of sections 201, 202, 303, 381 and 383 and the provisions of titles IV and V), including [the employment of persons and means] personal services in the District of Columbia and elsewhere; not to exceed [$50,000] $6,000 for the preparation and display of exhibits, including such displays at State, interstate, and international fairs within the United States; purchase of lawbooks, books of reference, periodicals, newspapers, [$400,000,000, to remain available until June 30, 1945] $250,000,000, together with not to exceed $40,000,000 of the funds appropriated under section 32, as amended, of the Act entitled "An Act to amend the Agricultural Adjustment Act, and for other purposes", approved August 24, 1935; in all, not to exceed $290,000,000, for compliance with programs under said provisions of the Agricultural Adjustment Act of 1938, as amended, and the Act of February 29, 1936, as amended, pursuant to the provisions of the [1943] 1944 programs carried out during the period July 1, [1942] 1943, to [December 31, 1943] June 30, 1945, inclusive: Provided, [That no part of said appropriation or any other appropriation in this Act shall be used for incentive or production adjustment payments, except for soil conservation and water conservation payments and payment of acreage allotment commitments on commodities as defined in the Agricultural Adjustment Act of 1938, as amended, and as enumerated and set forth in the "1943 Agricultural Conservation Program" bulletin, dated December 3, 1942: Provided further,] That not to exceed [$30,000,000] $25,000,000 of said amount shall be available for salaries and

Change No.

other administrative expenses for carrying out such programs: Provided further, That none of the funds herein appropriated or made available for the functions assigned to the Agricultural Adjustment Agency pursuant to the Executive Order (No. 9069) of February 23, 1942, shall be used to pay the salaries or expenses of any regional information employees or any State or county information employees, but this shall not preclude the answering of inquiries or supplying of information to in-
9 dividual farmers [: Provided further, That such amount shall be available for salaries and other administrative expenses in connection with the formulation and administration of the 1944 programs of soil-building practices and soil and water conservation practices, under the Act of February 29, 1936, and programs under the Agricultural Adjustment Act of 1938, as amended, the total expenditures of which, including administration, shall not exceed $300,000,000: Provided further, That no part of such amounts shall be available after June 30, 1944, for salaries and other administrative expenses except for payment of obligations therefor incurred prior to July 1, 1944]; Provided further, That the Secretary may, in his discretion, from time to time transfer to the General Accounting Office such sums as may be necessary to pay administrative expenses of the General Accounting Office in auditing payments under this item: Provided further, That such amount shall be available for the purchase of seeds, fertilizers, lime, trees, or any other farming materials, or any soil-terracing services, and making grants thereof to agricultural producers to aid them in carrying out farming
10 practices approved by the Secretary in the [1943] 1944 [, and 1945 programs] program under said Act of February 29, 1936, as amended; for the reimbursement of any Federal, State, or local government agency for [fertilizers, seeds, lime, trees, or other farming] such materials; or [any soil-terracing] services, [furnished by such agency;] and for the payment of all expenses necessary in making such grants, including all or part of the costs incident to the delivery thereof: Provided further, That notwithstanding any other provision of law, persons who in [1943] 1944 carry out farming operations as tenants or sharecroppers on cropland owned by the United States Government and who comply with the terms and conditions of the [1943] 1944 agricultural conservation program, formulated pursuant to sections 7 to 17, inclusive, of [the Soil Conservation and Domestic Allotment Act, as amended] said Act of February 29, 1936, shall be entitled to apply for and receive payments [, or to retain payments heretofore made,] for their participation in said program to the same
11 extent as other producers [: And provided further, That no part of such amount shall be available for carrying out the provisions of section 202(a) to (f) of the Agricultural Adjustment Act of 1938].

The first change in the language deletes the word "To" and inserts the words "For all expenses necessary to". This change is solely for the purpose of making the wording of this item conform with the usual form for appropriation language.

The second change, deleting the words "making of payments pursuant to sections 303 and 381" and inserting the words "provisions of sections 201, 202, 303, 381, and 383" is made in order to exclude sections 201, 202, and 383 of the Agricultural Adjustment Act of 1938, as amended, as well as sections 303 and 381, from those provisions of the Act for which this appropriation item is requested. Section 201 covers adjustments in freight rates for farm products for which the estimates propose a separate appropriation under the heading "Salaries and Expenses, Marketing Service, Food Distribution Administration." Section 202(a) to (e) covers the establishment of four regional research laboratories to conduct researches into and to develop new uses and markets for farm commodities, which is carried as a separate appropriation item under "Salaries and Expenses, Bureau of Agricultural and Industrial Chemistry." The Agricultural Appropriation Act has heretofore prohibited the use of funds made available under this item for carrying out the provisions of section 202(f). In view of the fact that the 1944 program is limited to soil-building and soil and water conservation practices, section 202(g) has been included since no part of the funds appropriated hereunder will be used to increase the domestic use and exportation of farm commodities. Section 383 provides that the Commodity Credit Corporation shall place all insurance of every nature taken out on cotton, and all renewals, extensions, or continuations of existing insurance, with insurance agents who are bona fide residents of and doing business in the State where the cotton is warehoused, and does not involve the Agricultural Adjustment Agency or relate to the agricultural conservation programs formulated under the Agricultural Adjustment Act of 1938 for which an appropriation is requested under this item.

The third change deletes the words "the employment of persons and means" and substitutes therefor the words "personal services." This change is in the interest of simplifying and shortening the wording of the item.

The fourth change deletes the limitation of $50,000 for the preparation and display of exhibits, including displays at State, interstate, and international fairs within the United States and inserts a limitation of $6,000 therefor. In view of present world conditions, which preclude the holding of international fairs within the United States and curtail the holding of State and interstate fairs, it is believed that $6,000 is sufficient for this purpose.

The fifth change deletes the words "$400,000,000, to remain available until June 30, 1945", and inserts "$250,000,000, together with not to exceed $40,000,000 of the funds appropriated under section 32, as amended, of the Act entitled 'An Act to amend the Agricultural Adjustment Act, and for other purposes' approved August 24, 1935; in

all, not to exceed $290,000,000." The deletion has the effect of further limiting the time within which the funds will be available for obligation for payments to farmers complying with programs formulated under the Soil Conservation and Domestic Allotment Act and the Agricultural Adjustment Act of 1938. The new language is inserted to provide authority for the transfer of $40,000,000 of Section 32 money to supplement the amount requested to be appropriated under this item.

The sixth change is made so that the appropriation will be available for compliance with the 1944 program carried out during the period July 1, 1943 to June 30, 1945. Otherwise, the closing date of this program would have been December 31, 1944, as heretofore. The change is made in order to make the program year end with the fiscal year.

The seventh change deletes the proviso that no part of the appropriation may be used for incentive or production payments. Inasmuch as the estimate of $290,000,000 is solely for a program of soil-building practices and soil and water conservation practices as authorized in the Department of Agriculture Appropriation Act, 1944, this limitation in no longer applicable.

The eighth change deletes the amount of $30,000,000 and substitutes therefor the amount of $25,000,000 which may be used for administrative expenses in carrying out the program.

The ninth change deletes the following provisions:

(1) The proviso making the appropriation available for salaries and other administrative expenses in connection with the formulation and administration of a program for the next succeeding program year. Accordingly, the authorization of $25,000,000 for administrative expenses for carrying out the Agricultural Conservation Program during the fiscal year 1945 will not contain specific authorization for the formulation of a 1945 program. However, if such a program is authorized, it will be necessary to plan it during the latter part of the 1944 program year.

(2) The proviso that no part of the appropriation shall be available for obligation beyond the close of the fiscal year for salaries and other administrative expenses. This proviso is unnecessary due to the fact that the entire appropriation is available for only one fiscal year.

The tenth change in language deletes reference to the 1943 and 1945 programs in the proviso that the appropriation under this item shall be available for the purchase of seeds, fertilizers, lime, trees, or any other farming materials, or any soil-terracing services and making grants thereof to agricultural producers to aid them in carrying out farming practices and thereby limits such purchases and grants out of this appropriation to those made in connection with the 1944 program.

This change is consistent with the plan to have the program year end with the fiscal year and will preclude the purchase of farming materials from this appropriation for use in connection with programs subsequent to the 1944 program.

The eleventh change deletes the proviso "And provided further, that no part of such amount shall be available for carrying out the provisions of Section 202(a) to (f) of the Agricultural Adjustment Act of 1938", inasmuch as this proviso is included with the other exceptions at the beginning of the item.

Other changes in the language of this item were made solely for the purpose of clarifying, simplifying, or shortening the wording.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$796,075	$1,423,267	$1,201,665
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	- -
Total cost of overtime (7 months in 1943)	796,075	1,423,267	1,201,665

Note: Overtime costs and amounts absorbed include, on an estimated basis, an allocable portion of the overtime costs shown in the Budget schedules for the consolidated account "Administrative expenses, Agricultural Adjustment Agency" which consists entirely of transfers from various appropriations and other funds.

WORK UNDER THIS APPROPRIATION

Objective: To make assistance available to all farmers in the United States to enable them to produce the maximum quantity of agricultural commodities with special emphasis on those critically needed in our war program and to carry out the policy of the Congress as set forth in the Agricultural Adjustment Act of 1938; more specifically to help farmers in their efforts to

(1) conserve and rebuild the country's farm and ranch land resources in the national public interest;

(2) maintain a supply of agricultural commodities adequate to meet needs of the armed forces, civilian population, lend-lease, and of populations of territories occupied by the armed forces of the United States;

(3) provide an orderly flow of commodities from the farm in order to avoid loss of food or fiber in the marketing process;

(4) stabilize the farm economy.

The Problem and its Significance: The Nation needs strength-giving food in increased quantities to feed its armed forces, its war-working civilians, and to contribute to the food needs of our allies. Oil crops are needed in great volume to replace imports of vegetable oils which have been shut off by the war. There is need for all that can possibly be grown of a long list of commodities that are of vital importance to the prosecution of the war. It is axiomatic that before people can work, before they can fight, before they can achieve victory, they must eat.

Farmers are being called upon to produce a record volume of agricultural commodities in 1944--an objective even greater than the record achievement of 1943. In 1944, special emphasis needs to be placed upon increasing the production of those agricultural commodities which are crucial in the war effort, such as dairy products, dry beans, meat, sugar beets, soybeans, peanuts, Irish and sweet potatoes, vegetables, and feed and hay crops. This expansion, coupled with shifts in production, will be very difficult to achieve in view of the shortages of labor, machinery, equipment, fertilizer, and most important of all, the fact that almost all productive cropland is already being used. One of the major means of increasing output is therefore through higher yields per acre.

Increased production of needed crops, practically all of which are highly soil-depleting, breaks up normal rotation practices and otherwise accentuates soil depletion. In addition, there is a natural tendency on the part of farmers to postpone or omit the carrying out of soil conserving practices because of limitations of time, labor, and facilities. In the stress of emergency production, farmers are inclined to devote their efforts first to the tasks which, at the moment, seem more pressing. The tendency on the part of farmers to forego conservation intensifies the need for providing guidance and assistance to them in carrying out those measures which are necessary to maintain our soil and water resources. Unless something is done to help farmers with their yield-increasing and soil-conserving practices, the potential contribution of many farms to increased wartime production will be lost.

The following table, based upon research and studies carried out by the Soil Conservation Service, State Experiment Stations, and other technical people in local areas, illustrates the size of the conservation problem in terms of acreage needing treatment afforded by specific practices:

Total U. S. Needs for Certain Conservation Practices

Practice	U. S. Total Need (million acres)
Contour planting	122
Stripcropping	90
Cover crops	33
Green manure crops	55
Fertilizing pastures	112
Liming pastures	87
Seeding range and pasture	117
Terracing	95
Farm drainage (on cultivated or partly cultivated land)	31

The strain on the land of all-out production creates erosion problems and brings about depletion of productivity which, if not coped with now, would not only curtail prodution during the war but would lead to serious permanent damage. Past experience has clearly shown that needed practices will not be carried out in the necessary volume unless direct assistance is furnished through an extensive program that reaches all farmers. For example, during and after the last war, when farm income was at what was then record high levels, soil depletion likewise reached a new peak. Production was expanded without regard for conserving soil fertility. Thus, there was created in the Dust Bowl and elsewhere the biggest erosion hazards in American history.

Western range lands, totaling nearly 40 percent of the total land area of the continental United States, are one of the Nation's greatest natural assets and contribute greatly to our food and meat supply. At the present time, this country has the largest number of livestock in history and the need for conserving water for livestock and preserving the range lands, through proper range management is imperative. A similar situation prevailed in the early thirties which led to Senate Resolution No. 287 (74the Cong., 2nd Session). This resolution brought to public attention in Senate Document 199 the depleted condition of western ranges. At that time it was estimated 17 million animal units were being grazed on ranges west of the hundredth meridian which should have been carrying about 10 to 11 million units in order to maintain their forage resources. Forage depletion for the entire range area averaged more than half; the result of overgrazing and attempts to cultivate 50 million acres of dry land not adapted to continuous crop production. Depletion of the range showed up in reduced forage production, a thinning out and loss in quality of the grass cover and extensive soil losses from wind and water erosion. In wide areas the quantity of the forage had declined rapidly and in many parts valuable forage plants were replaced by the less nutritious and

less palatable species. As a result, the percent of calf and lamb crops began to show a gradual decrease and there was a marked decrease each year in the total amount of livestock products produced from range livestock. The Range Program was inaugurated in 1936 for the purpose of correcting this situation.

The importance of small pastures readily accessible to domestic livestock cannot be over-emphasized for they supply roughage which is required and often replace some of the grain and hay. The application of lime and superphosphate has increased the amount of pasture forage and has improved its quality in the pastures of the humid area. Where these pastures have been overgrazed and palatable grasses replaced by weeds, some of the conservation practices applicable to range land such as reseeding, grazing management, and contour furrowing can be used to increase the desirable pasture forage. Extensive surveys and studies indicate the following practices are needed on grazing land:

Dams and reservoirs	460,000
Deferred grazing	325,000,000 acres
Springs and seeps	85,000
Wells for livestock	35,000
Pasture improvement (reseeding)	40,000,000 acres
New pasture and range reseeding	77,000,000 acres

The supply of many conservation materials needed, such as phosphate, cover crop seed, lime and other materials, has been insufficient for recent farming needs. A major reason for insufficient supplies has been the seasonal purchasing by farmers, lack of storage, inability to finance year-round operations with seasonal sales all resulting in seasonal operations on the part of producers. To make additional supplies of these materials available to farmers, orders and contracts are being placed which will provide the producers of conservation materials with adequate "backlog" orders for year-round capacity production.

The importance of a conservation material, such as superphosphate, is illustrated by the following example: if 1,500,000 tons of 18 percent superphosphate were put on 10 percent of the Nation's 73 million acres of plowable pastureland in the humid areas, it would produce enough additional feed to permit an increase of 3,675,000 in the number of cattle pastured or supply feed equivalent to 168 million bushels of corn.

It is significant to note that, as a general rule, income is lowest on farms where conservation and production practices are needed most. Even though total farm income is higher than in recent years, a very large group of farmers do not have sufficient income, in the form of ready cash when needed, to finance a sufficient number of conservation

practices. Tenants and sharecroppers, because of their turnover in tenure and lack of credit or finances at the time of initiation of a practice, often do not evidence interest in carrying out conservation practices. Most of the practices require expenditure of funds or other resources at the time they are carried out. Farmers frequently have total crop losses from uncontrollable hazards in spite of using the best practices. This causes many farmers to hesitate to invest in practices when they are not sure they themselves will be on the land to receive the benefits from such practices. The offer of assistance through the agricultural conservation program assures farmers that a part of the original costs or investments will be reimbursed.

There is need for the largest possible volume of naval stores that can be produced without destroying or seriously damaging production for future years. Present high prices may cause overbleeding of pine trees in an effort to reap the benefits of these prices through an overexpansion of production if a positive naval stores program is not in effect.

General Plan: The language under this item in the 1944 Department of Agriculture Appropriation Act provided for the formulation and administration of a 1944 program of soil-building and soil and water conservation practices, the total expenditure for which would not exceed $300,000,000. Practices for inclusion in such a program have been formulated with the assistance of:

(1) county and community AAA committees, other farmers, and county agricultural workers,

(2) State AAA committees,

(3) technical committees made up of State college agricultural specialists and representatives of various Federal and State agricultural agencies.

The county and State recommendations on practices were combined into an overall national program after giving careful consideration to each practice to determine whether its inclusion in the program could be expected to result in increased production in 1944.

The approved list of practices included those practices that will (1) increase yields of agricultural commodities required in the war program, (2) conserve and improve soil fertility, (3) promote conservation and better utilization of water, (4) conserve and increase range and pasture forage, (5) prevent wind and water erosion, and (6) be significantly influenced in volume of performance by inclusion in the program.

State programs, developed in accordance with the above-prescribed procedure, were then approved within the limitation of the national program. Because of the varied agricultural conditions, needed practices will vary widely from State to State. The practice included in the proposed 1944 program which are the most important by areas of the country are:

Corn Belt	Contour cultivation, farm drainage, limint, application of superphosphate, green manure crops
East Central	Liming, application of superphosphate, winter cover crops
Great Plains	Water conservation and practices to prevent wind erosion
Northeast	Liming, application of superphosphate, green manure crops
Cotton Belt	Winter and summer cover crops, application of superphosphate, terracing, permanent pastures, liming
Range Area	Development and conservation of water on grazing land, grazing management
Intermountain and Pacific Coast	Cover and green manure crops, phosphate and liming, protected fallow and trashy tillage, weed control, renovation of perennial grasses and legumes

Under the 1944 program it is contemplated that approximately 20 million tons of ground limestone will be applied by farmers. Increased use of limestone permits growing larger acreages of leguminous crops which provide improved livestock feed and increased yields of other crops in the rotation.

There follows a statement indicating the amounts of limestone applied on farms in the United States for the years 1929-1942:

Year	Applied on farms not participating in AAA program	Applied under AAA program 1/	Total amount applied on all farms 2/
	Tons	Tons	Tons
1929...	3,740,000	- -	3,740,000
1930...	3,500,000	- -	3,500,000
1931...	2,550,000	- -	2,550,000
1932...	1,840,000	- -	1,840,000
1933...	1,630,000	- -	1,630,000
1934...	2,430,000	- -	2,430,000
1935...	3,290,000	- -	3,290,000
1936...	2,690,000	3,620,000	6,310,000
1937...	1,810,000	4,990,000	6,800,000
1938...	2,030,000	5,020,000	7,050,000
1939...	2,210,000	5,790,000	8,000,000
1940...	1,430,000	12,000,000	13,430,000
1941...	2,430,000	13,520,000	15,950,000
1942...	2,000,000 *	18,970,000	20,970,000

* Estimated.

1/ Tabulated from reports of performance.

2/ Bureau of Agricultural Economics. Compiled from reports of the National Lime Association, based on agricultural conservation program records, county agent and producer surveys and estimates.

Under the 1944 program it is contemplated that some 2-1/2 million tons of 18 percent superphosphate will be used above that which would be used in the absence of the program. By expanding the use of superphosphate large increases in production can be brought about with very little extra labor or equipment.

There are approximately 122 million acres of cropland in the United States on which contour farming stripcropping should be practiced in order to obtain maximum yields and to reduce erosion. Contour farming and intertilled crops will increase yields from ten to twenty percent.

In the South, Pacific Coast, and other areas where land lying uncovered through the winter is an erosion problem, cover crops have proved highly beneficial. By planting a cover crop in the fall, after the season's commercial crop has been harvested, land is protected from erosion during the winter. In the spring it may be plowed under as a green manure crop.

The growing of leguminous crops in the Corn Belt and on irrigated land as green manure crops are encouraged to give soil protection, supply organic matter, and increase soil fertility. It is estimated that approximately 33 million acres should be put to cover crops and approximately 55 million acres to green manure crops annually in order to obtain maximum yields. Yields of crops following green manure or cover crops will be increased from 10 to 40 percent. Leguminous cover crops which add nitrogen to the soil are to be especially encouraged.

In the low rainfall areas of the Great Plains and Intermountain area conservation and proper utilization of water is one of the most urgently needed practices to increase production. Practices under the program designed to assist in this problem include construction of dams, ponds, and wells, the development of springs and seeps, contour furrowing, summer fallowing, and other tillage practices. In 1943 it is estimated that 13 million acres were summer fallowed.

The wartime maximum production capacity study indicates that there should be between 15 and 19 million acres of summer fallow annually in the subhumid and semi-arid areas in order to obtain maximum production in these areas. It is important that this acreage be summer fallowed using methods which will protect the land against wind and water erosion. Properly protected summer fallow will give greatly increased yields compared to methods which have customarily been used because they bring about the storage of additional moisture and reduction of weed growth and protection against erosion.

Wind erosion control practices such as border planting, the leaving of crop residues on the land, listing, and stripcropping are encouraged in the Great Plains area to protect crops from soil blowing.

Proper utilization and management are the real bases for range conservation and increased emphasis is being placed upon this phase of the program by encouraging range men to execute a management plan prior to the grazing season so that ample provision will be made for feeding their

livestock under all conditions. Conservation measures to fit the needs of each particular ranching unit contribute to the effectiveness of any practical management plan which might be adopted. Progress has been made and were it not for the steps which have been taken under the AAA program to encourage ranchers by making payments for conservation measures that protect and conserve the range resources, the number of livestock carried on the range would not have been as great as during the past year. However, range restoration is a slow process and there is still much to be done in the way of education and mechanical practices if maximum returns are to be expected from range lands. Since the program was initiated many conservation practices applicable to grazing land have been carried out, but the following practices have made the greatest contribution to range restoration.

Selected Conservation Practices Carried Out on Range and Pasture Land

Practice	Unit	1942 program	Total 1936-1942 programs
Natural reseeding pastures or range land by deferred grazing	Acre	19,378,000	148,962,000
Artificial reseeding pasture or range land	Acre	1,217,135	9,548,397
Drilling of wells	Number	4,273	26,272
Dams and reservoirs	Number	56,057	336,217
Spring development	Number	2,212	37,181
Control of destructive plants	Acre	1,763,167	13,381,843

Approximately 95 million acres of cropland in the United States should be terraced in order to prevent erosion and to assure continued production from this land. In high rainfall and hilly areas where cultivated row crops are grown, terracing is a necessary practice if the soil is to be retained and production maintained.

Tile and open ditch drainage has been included in the program to bring into production many acres of potentially high productive land which is now relatively unproductive because it is improperly drained.

Practices have been provided to improve irrigation systems and methods which result in more efficient use of irrigation water.

1944 Food Production Goals

During October 1943, representatives of the Agricultural Adjustment Agency and other agencies of the War Food Administration met in each State with State USDA War Boards, State college agricultural specialists, commissioners of agriculture, farm leaders, farmers and ranchers to determine the 1944 goals for crops and livestock. Information concerning estimated national production needs and production facilities was presented and thoroughly discussed at these meetings.

The process of determining goals for the 3,024 agricultural counties included meetings with county AAA committees, county representatives of other agencies, and farmers, to discuss estimated national needs and production facilities problems such as farm labor, machinery and fertilizer. Each county now has its production goals for 1944.

In addition, each county and community committee is familiar with the practices, conservation materials and services, and other assistance which is available to farmers through county AAA offices in helping them to meet their goals. Under the plan, local farmer-community committeemen and county committeemen will explain to each of the approximately 6,000,000 farmers of the nation the 1944 production needs. During this period each farmer will work out his plan for the 1944 crop year with the aim of making the greatest contribution to the national goal. At the same time that the farmer committeeman discusses requirements and goals, he will also point out the adapted conservation practices which will increase yields and conserve soil and water, and obtain from the farmer information regarding his need for materials and equipment.

The War Food Administrator has announced the national goals which are a total of State goals determined at these State meetings which, with existing facilities, will most nearly meet our national agricultural requirements. The following tables set forth the 1944 goals for major crops, as compared with the average acreage during 1937-1941 and the acreage in 1942 and 1943, and 1944 goals for livestock and livestock products as compared with the average production during 1932-1941 and the 1943 indicated production.

Comparison of 1943 Indicated and 1944 Goals with Prior Production of Certain Agricultural Commodities

	Unit	1944 Goal (thousands)	1943 Indicated (thousands)	1942 Reported (thousands)	1937-41 Average (thousands)	1944 Goal as % of 1937-41 Average	1944 Goal as of % 1943 Ind.
Grain and Hay							
Corn	Acre	100,253	97,136	90,552	91,975	109.0	103.2
Oats	"	39,558	42,858	42,595	39,646	99.8	92.3
Barley	"	17,372	17,329	19,536	14,290	121.6	100.2
Sorghums (except sirup)	"	16,740	17,291	15,826	17,070	98.1	96.8
Hay (all tame)	" 1/	62,838	61,016	60,121	57,197	109.9	103.0
Wheat	"	67,030	55,109	52,227	69,311	96.7	121.6
Rye	" 1/	2,408	2,777	3,860	3,700	65.1	86.7
Rice	"	1,525	1,531	1,483	1,118	136.4	99.6
Oil and Fiber Crops							
Soybeans	" 1/	13,654	10,820	10,008	4,121	331.3	126.2
Flaxseed	"	5,895	6,320	4,715	2,307	255.5	93.3
Peanuts (picked & threshed)	" 1/	4,964	3,949	3,439	1,818	273.0	125.7
Cotton	"	22,277	22,151	23,302	26,357	84.5	100.6
Hemp for fiber	"	221	178	15	2/	2/	124.2
Sugar Crops							
Sugar beets	"	951	619	1,048	913	104.2	153.6
Sugar cane for sugar & seed	" 1/	333	322	317	289	115.2	103.4
Vegetables							
Irish potatoes	"	3,519	3,430	2,789	2,913	120.8	102.6
Sweet potatoes	" 1/	1,056	889	709	741	142.5	118.8
Other Crops							
Dry Beans	"	3,048	2,734	2,106	1,977	154.2	111.5
Tobacco	" 1/	1,756	1,462	1,377	1,613	108.9	120.1

1/ Harvested, all others are planted acres. 2/ A negligible amount planted in 1937-41 period.

Comparison of 1943 Indicated and 1944 Goals with Prior Production of Livestock and Livestock Products

Item	Unit	1944 Goal	1943 Indicated	1932-41 Average	1944 Goal as % of 1932-41 Average	1944 Goal as % of 1943 Indicated
Milk, Production on farms	Million lbs.	121,237	118,302	105,332	115.1	102.5
Milk cows, No. on farms	Thou. Head	26,148	25,669	25,363	103.1	101.9
Eggs	Million Doz.	4,597	4,516	3,079	149.3	101.8
Hens and Pullets	Thousands	527,012	487,089	375,782	140.2	108.2
Chickens (Raised)	"	892,983	925,652	656,464 1/	136.0	96.5
Chickens Broilers (No. produced)	"	208,805	248,576	110,927 1/	188.2	84.0
Turkeys	"	32,079	33,176	26,588	120.7	96.7
Hogs: Sows to Farrow in Spring	Thou. Head	10,325	12,140	7,488	137.9	85.0
Hogs: Sows to Farrow in Fall	"	6,898	8,515	4,511	152.9	81.0
Cattle and Calves, Total	"	76,842 3/	80,800 2/	68,478	112.2	95.1
Sheep and Lambs	"	51,901	55,089	52,601	98.7	94.2

1/ 1937-41 average.
2/ Preliminary indication of number of farms January 1, 1944.
3/ Estimated number that would be on farms January 1, 1945, if suggested 1944 marketing and farm slaughter are achieved.

Progress and Current Program: In 1943, a program was designed in an effort to fulfill the responsibilities of agriculture in the war. Farmers were urged to produce such essential crops as soybeans, peanuts, flax, potatoes, beans, and high-yielding feed crops. At the same time, farmers were encouraged to produce as much corn, wheat, and rice as they could without reducing the acreage of the more vital war crops. Only in the case of tobacco were marketing quotas continued in effect throughout the year and then only to check undue expansion at the expense of food and feed crops.

AAA committeemen discussed national needs for commodities with farmers and explained to them why expansion was needed in particular crops. On the basis of each farmer's experience and facilities for producing different crops and livestock, the committeeman and the farmer worked out a production plan for each farm which would result in the maximum contribution of the farm toward the county, State, and national goals. In developing this production plan, it was necessary to consider the crop rotations, the equipment, the condition of the cropland and grazing land on the farm as well as previous acreage and production records available from past programs. The completed farm plans were tabulated by communities and counties to determine if contemplated plantings were adequate to reach the goals. If the indicated acreage or production for any vitally needed crop or livestock was substantially short of the goal, a special effort was made to induce farmers to increase their intentions in this particular commodity. The success of this procedure is borne out by the increased acreage and production of vitally needed agricultural commodities in 1943 which was indicated on the farm plans early in the year.

Indications of the significant production increases in crops and livestock as compared with the ten-year average 1932-1941 are shown in the following table:

Acreage and Production of Specified Crops 1/

1932-41 Average and 1943

Crop	Acreage Harvested			Unit	Production		
	Average 1932-41	1943	1943 as percent of 1932-41 Avg.		Average 1932-41	1943	1943 as percent of 1932-41 Avg.
	1,000	1,000	Percent		1,000	1,000	Percent
Corn	94,511	94,790	100.3	Bu.	2,349,267	3,076,159	130.9
Wheat, all	54,572	50,554	92.6	Bu.	738,412	836,298	113.3
Oats	35,979	38,449	106.9	Bu.	1,018,783	1,143,867	112.3
Barley	11,120	14,702	132.2	Bu.	243,373	322,187	132.4
Flaxseed	1,804	5,867	325.2	Bu.	14,226	52,008	365.6
Rice	978	1,500	153.4	Bu.	47,334	70,025	147.9
Cotton	27,718	21,874	78.9	Bales	12,474	11,478	92.0
Hay, all tame	56,649	61,016	107.7	Tons	73,277	87,264	119.1
Dry Beans	1,706	2,465	144.5	Bags	14,325	21,799	152.2
Dry Peas	238	795	334.0	Bags	2,617	10,870	415.4
Soybeans, for beans	2,948	10,820	367.0	Bu.	51,571	195,762	379.6
Peanuts	1,648	3,949	239.6	Lb.	1,214,777	2,561,610	210.9
Potatoes	3,131	3,322	106.1	Bu.	363,332	464,656	127.9
Sweetpotatoes	833	889	106.7	Bu.	69,291	72,572	104.7

1/ Source: Bureau of Agricultural Economics 1943 - Annual Summary of Crop Production.

Livestock and Livestock Products: Production 1932-41 and Indicated 1943 Production

Item	Unit	Average 1932-41	1943 Indicated	1943 Indicated as Percent of Average 1932-41
Milk, produced on farms	Million Lbs.	105,332	118,302	112.3
Milk cows, No. on farms	Thousand Head	25,363	25,669	101.2
Eggs	Million Doz.	3,079	4,516	146.7
Hens and Pullets	Thousands	375,782	487,089	129.6
Chickens (Raised)	"	656,464 1/	925,652	141.0 1/
Chicken Broilers (No. produced)	"	110,927 1/	248,576	224.0 1/
Turkeys	"	26,588	33,176	124.8
Hogs: Sows to Farrow in Spring	Thousand Head	7,488	12,140	162.1
Hogs: Sows to Farrow in Fall	"	4,511	8,515	188.8
Cattle and Calves, Total	"	68,478	80,800 2/	118.0
Sheep and Lambs	"	52,601	55,089	104.7

1/ 1937-41 Average.
2/ Preliminary indication of number on farms Jan. 1, 1944.

Since the passage of sections 7 to 17 of the Soil Conservation and Domestic Allotment Act of 1936, the Agricultural Adjustment Agency has made assistance available to all farmers in all parts of the country for carrying out conservation practices on their farms. Approximately three-fourths of the farmers in the United States have availed themselves of this assistance and have carried out needed conservation work in the interest of the general welfare which, previously, they had not carried out to any great extent. Approximately 84 percent of the cropland and 65 percent of the grazing land in the country participated in all phases of the 1942 AAA program.

Under the 1943 agricultural conservation program, with the increased need for food crops, many of which were highly soil-depleting, greater emphasis than ever before was placed on the carrying out of soil-conserving practices which would give immediate increased yields and keep the soil in a high state of fertility for production in future years.

The substantial increase in volume of conservation practices that has been obtained since the AAA conservation program began in 1936 is evidence of the effectiveness of the program, as indicated in the following table:

Comparison of Program Practices Carried out Under the Program in 1936 with 1942

Practice	Unit	Extent	
		1936	1942
Application of Materials:			
Ground limestone (or equivalent)...	Acre	2,210,211	10,765,042
	Tons	3,620,000	18,971,484
20% superphosphate (or equivalent).....	Acre	1,010,906	8,001,626
	Tons	121,000	1,073,304
Green manure and cover crops.....	Acre	13,687,327	17,342,697
New seedings of legumes and grasses.....	Acre	30,297,031	38,311,557
Erosion control and pasture improvement:			
Terracing.....	Acre	791,591	896,720
Contour listing or furrowing.....	Acre	1,292,776	8,074,746
Protecting summer fallow.....	Acre	3,584,913	14,105,479
Contour farming intertilled crops and contour seeding small-grain crops.....	Acre	- -	11,018,157
Stripcropping and strip fallowing.....	Acre	- -	8,404,459
Reseeding of pastures or range land:			
Natural (by deferred grazing).....	Acre	36,847	19,378,483

Increased yields per acre brought about by conservation farming promoted by the farm program is one important reason why the American farmer has been able to accomplish the stupendous task of feeding our armed forces, supplying our allies abroad and keeping the nutrition of the American people at a higher level than in peacetime.

Index of Crop Yields and Agricultural Adjustment Agency Soil-Building Payments

Specified Periods

Year	Index of Crop Yields Per Acre 1/ 1923-32 = 100		
	Percent		
1919	99		
1920	109		
1921	92		
1922	100		
1923	99)		
1924	98)		
1925	100)		
1926	103)		
1927	102(	100	
1928	104)		
1929	98)		
1930	93)		
1931	103)		
1932	100)		
1933	94		
1934	81		
1935	101		
1936	88		
1937	118)		
1938	114)		
1939	115)		
1940	120(	121	Period of soil-building practice program operation.
1941	122)		
1942	136)		
1943 2/	124)		

1/ Bureau of Agricultural Economics index for 28 crops.
2/ Preliminary.

Taking the yields of principal crops during the period 1923 to 1932, as 100, yields during the period 1937 to 1943 (the years during which the program has been in operation) averaged 121%.

Farmer Committeemen

The committeeman system of the Agricultural Adjustment Agency has resulted in the administration of programs by local people who know the actual conditions in the county and community. Thus, the farmer freely discusses his problems to determine what assistance is available under the AAA program. The adaptation of programs to local needs has enabled farmers to use these programs and to make maximum contributions to production.

The efficiency of the farmer-committeeman system and the thoroughness of its representation of the Nation's farmers are illustrated by the fact that direct contacts can be made with every agricultural county and community in the Nation within twenty-four hours. The work of the committeemen at the "grass roots" has been an outstanding factor in obtaining increases in production and promoting conservation of the Nation's soil resources.

The farmer committeemen provide a source of readily available assistance in handling locally such wartime farm production problems as farm machinery rationing, off-highway gasoline allowances, transportatation, and farm construction applications.

Under this system the county committees of the Agricultural Adjustment Agency have individual farm records and quick contact with all farmers and are capable, therefore, of giving maximum assistance in reaching production goals. Without this assistance, the record production of 1942 and 1943 could not have been reached.

(b) Parity Payments

Appropriation Act, 1944	$170,281,000
Budget estimate, 1945	- -
Decrease	-170,281,000

PROJECT STATEMENT

Project	1943 (estimated)	1944 (estimated)	1945 (estimated)	Increase or decrease
Parity payments to farmers under Section 303 of the Agricultural Adjustment Act of 1938	162,516,000	- -	- -	- -
Expenses of county agricultural conservation associations	6,528,880	820,000	- -	- 820,000
Administrative expenses .	2,704,963	1,000,000	500,000	- 500,000
Allotments and transfers to other agencies cooperating in parity programs (as shown in Budget schedules)	436,453	293,126	- -	- 293,126
Total obligations, parity program	172,186,296	2,113,126	500,000	- 1,613,126
Prior year balances available in 1943	-4,826,013	- -	- -	- -
1943 balance available in 1944	-7,926,564	+7,926,564	- -	- 7,926,564
1944 appropriation obligated in 1943	-159,741,310	+159,741,310	- -	-159,741,310
1944 appropriation available in 1945	- - -	+ 500,000	- 500,000	- 1,000,000
Covered into Treasury in accordance with Public Law 674	+ 41,648	- -	- -	- -
Total available	- 265,943	170,281,000	- -	-170,281,000
Transfers in estimates to other appropriations (as shown in Budget schedules)	+ 265,943	- -	- -	
Total estimate or appropriation	- -	170,281,000	- -	

DECREASE

(1) There is a decrease of $170,281,000 in this item due to the elimination of parity payments on the 1943 crops.

CHANGE IN LANGUAGE

Inasmuch as the estimates include no provision for parity payments, it is proposed that the entire language for this item be deleted.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$209,725	$132,179	$68,795
Additional funds for overtime (appropriated, 1943; estimated supplemental, 1944; and included in budget estimate, 1945)	--	--	--
Total cost of overtime (7 months in 1943)	209,725	132,179	68,795

Note: Overtime costs and amounts absorbed include, on an estimated basis, an allocable portion of the overtime costs shown in the Budget schedules for the consolidated account "Administrative expenses, Agricultural Adjustment Agency" which consists entirely of transfers from various appropriations and other funds.

GENERAL STATEMENT

The Department of Agriculture Appropriation Act, 1943, provided in part "*** the Secretary is authorized and directed to make such additional commitments or incur such additional obligations as may be necessary to provide for full parity payments for the crop year 1942 ***". Pursuant to this authorization an amount of $170,281,000 was provided in the Department of Agriculture Appropriation Act, 1944, to liquidate such commitments and obligations.

The Agricultural Adjustment Agency is now making payments on the 1942 crop of corn, wheat, and some types of tobacco. The rates of such payments are the amount by which parity price for the commodity for the 1942 crop year exceeds the sum of (1) the basic loan rate or the average farm price, whichever is the higher, for that crop for 1942, and (2) the applicable rate of payment under the 1942 agricultural conservation program.

The rates and payments on the 1942 crop, are as follows:

Commodity	Unit	Rate	Amount
Corn	Bu.	7.2¢	$82,147,000
Wheat	Bu.	13.7¢	79,419,000
Tobacco:			
Cigar (41)	Lb.	0.2¢)	
Other cigar (42-44,46, 51-55)	Lb.	1.0¢)	950,000

(c) Administration of the Sugar Act (Allotment to Agricultural Adjustment Agency)

This Budget schedule covers obligations under allotments made to the Agricultural Adjustment Agency for making payments to producers under Title III of the Sugar Act of 1937. Payments are authorized by the Sugar Act to be made to producers complying with certain conditions, including the paying of fair wages to field workers, refraining from employing child labor, carrying out soil-conserving practices, and complying with their farm allotments (known under this legislation as proportionate shares). All payments are made through the offices of the Agricultural Adjustment Agency in both the continental United States and in the insular possessions.

(d) Exportation and Domestic Consumption of Agricultural Commodities (Allotment to Agricultural Adjustment Agency)

This Budget schedule reflects obligations under an allotment made during the fiscal year 1943 to the Agricultural Adjustment Agency for potato and truck crop payments. These payments were applicable to Irish potatoes and commercial truck crops for fresh consumption and were made on the acreage of 90% of the farm crop goal but not exceeding the larger of one acre or 20 percent of the farm crop goal. The acreage for each crop was determined on a planted basis. If no farm crop goal was determined for Irish potatoes or commercial truck crops and more than 2.7 acres were planted to the crop, the farm was considered to have a three-acre goal for the crop solely for the purpose of determining payments.

The rates of payment per acre were:

Irish potatoes - 50 cents per bushel times the normal Irish potato yield for the farm

Commercial truck crops - $50.00

(e) Working Funds (Agricultural Adjustment Agency)

This Budget schedule covers obligations under advances to the Agricultural Adjustment Agency pursuant to Section 601 of the Economy Act of June 30, 1932 for services performed for the War Department.

(f) Administrative Expenses, Agricultural Adjustment Agency

This Budget schedule reflects obligations against the appropriation account established pursuant to Section 392(a) of the Agricultural Adjustment Act of 1938, as amended, and covers departmental and field administrative expenses of the Agricultural Adjustment Agency in carrying out, or cooperating in carrying out, the provisions of the several Acts in connection with which its personnel and facilities are utilized.

The amounts transferred into the appropriation account are within the limitations established for administrative expenses under the several appropriations from which such transfers are made.

That part of Section 392(a) authorizing the establishment of the appropriation account is quoted below:

> "The Secretary of the Treasury is authorized and directed upon the request of the Secretary to establish one or more separate appropriation accounts into which there shall be transferred from the respective funds available for the purposes of the several Acts, in connection with which personnel or other facilities of the Agricultural Adjustment Administration are utilized, proportionate amounts estimated by the Secretary to be required by the Agricultural Adjustment Administration for administrative expenses in carrying out or cooperating in carrying out any of the provisions of the respective Acts."

Personnel and facilities of the Agricultural Adjustment Agency are utilized in carrying out the provisions of the Soil Conservation and Domestic Allotment Act, as amended, the Agricultural Adjustment Act of 1938, as amended, the Sugar Act of 1937; in cooperating in carrying out provisions of the Federal Crop Insurance Act, certain programs under the appropriation "Exportation and Domestic Consumption of Agricultural Commodities"; and in performing functions delegated by the War Food Administrator. Transfers have been made to this account from appropriations provided for carrying out these programs or arising from activities incident thereto.

(g) Local Administration, Sec. 388, Agricultural Adjustment Act of 1938

This Budget schedule reflects obligations against the appropriation account established pursuant to sections 388 and 392(a) of the Agricultural Adjustment Act of 1938, as amended, and covers expenses of county agricultural conservation associations in carrying out, or in cooperating in carrying out, provisions of the several Acts in connection with which their personnel and facilities are utilized.

The committeeman system was established by section 8(b) of the Soil Conservation and Domestic Allotment Act, as amended, by the Congress which recognized the necessity for such a far-reaching program - with both immediate and future aims - to be administered by farmers themselves.

The establishment of the administrative machinery of the Agricultural Adjustment Agency upon this democratic foundation carried with it recognition that farm programs, if they are to be consistently operated for the greatest benefit to the largest number of farm people, must be under the supervision of farmers whose principal concern is the best interests of the local farm population. To guarantee that these programs would be administered in the interests of local farm people, Congress provided that county and community committeemen shall be resident farmers elected to their positions each year by local farmers.

In addition to carrying out, or cooperating in carrying out, programs formulated under the several acts authorizing the utilization of local committees of farmers, the county agricultural conservation associations are cooperating in carrying out many functions delegated to the Agricultural Adjustment Agency by War Food Administrator's Memorandum #31. These functions, for which funds are transferred from appropriation, "Salaries and Expenses, War Food Administration", constitute assistance to farmers in handling locally such wartime problems as:

Farm machinery, equipment, and supplies: The need to place farm machinery where it can be used to the best advantage is particularly important for two reasons: (1) the quantity of machinery being produced is less than before the war, and (2) the demand for machinery, particularly the labor-saving types, has increased tremendously because of the loss of labor from farms. In connection with farm machinery rationing, county committees are called upon to:

(1) explain to all potential applicants and other interested persons the rationing program and the reasons therefor;

(2) prepare and issue purchase certificates or letters of denial;

(3) inform local dealers about the machinery rationing program and the regulations issued in connection therewith, and assist them in filing certain types of reports;

(4) hear and act on appeals of individual farmers;

(5) promote custom and exchange use of existing machinery;

(6) assist farmers in preparing applications for preference ratings;

(7) assist farmers in preparing the necessary forms to obtain miscellaneous farm supplies and repair parts;

(8) conduct surveys and make reports with respect to farm machinery;

(9) maintain records and assist in the organization of machinery and equipment exchanges among individuals and between counties.

In general, county committees are called upon to perform such functions as are necessary to properly distribute available farm machinery, supplies, and equipment.

Transportation: County farm transportation committees, composed of representative farmers, truckers, and farm supply services, have been appointed by and operate under the direction of AAA county committees, with the chairman of the AAA county committee serving as chairman of the transportation committee. In connection with the problem of transportation, county committees have been called upon to:

(1) explain to farmers and interested persons the farm transportation program;

(2) assist farmers and farm produce haulers in preparing Certificates of War Necessity and review same;

(3) assist farmers in preparing truck applications;

(4) make recommendations on applications for essential off-farm gasoline rations and tire conservation applications;

(5) assist in organizing transportation pools;

(6) organize community transportation groups and assist individuals with numerous special transportation problems;

(7) make recommendations on converting steel-wheeled tractors to rubber (this is of considerable importance in view of the shortage of new farm machinery and the resulting need for greater custom use of existing machines.)

Fertilizers and Insecticides: Limitations in the supplies of fertilizer and insecticide ingredients have necessitated controls in production and distribution. County committees meet with farmers and dealers to inform them about the provisions of the fertilizer orders, the necessity for ordering their fertilizers early, and assist farmers in preparing their applications for fertilizer which are to be filed with the dealer when placing orders.

County committees keep informed on the fertilizer situation in their counties, report shortages to the State Committee, and report violations of orders. The committees also keep farmers informed about supplies of insecticides, and the use of substitutes.

Farm Construction: Approval must be obtained for the construction of all new buildings with certain minor exceptions. In connection with farm construction, county committees

(1) explain to farmers the farm construction program and the reasons therefor;

(2) assist farmers in preparing applications and filling out priority forms for materials and items (this involves a great deal of time and necessitates the county office's keeping up to date on all forms and the proper channeling thereof) for which WPB forms are required;

(3) review and transmit applications to the State office or issue letters of denial;

(4) review appeals;

(5) conduct surveys, prepare reports, etc.

County committees are authorized to consider emergency construction needs and grant approval under certain circumstances. Included in this category for example, are fire and tornado cases and cases where immediate construction of storage facilities is needed to avoid loss of crops or stock.

In addition to the above, county committees perform functions in connection with the issuance of lumber preference rating certificates, slaughter and food permits and certifications, canner and processor certifications; copperwire quotas, salvage campaigns, purchase and price support programs, and obtaining needed supplies of protein feeds, wheat and corn, etc. Generally speaking, county committees assist the farmers in the solution of any farm problems that may arise.

(h) Payments for Agricultural Adjustment

This Budget schedule covers obligations incurred during the fiscal year 1943 (from July 1 to December 2, 1942, inclusive) for administrative expenses in the settlement of claims and accounts arising in connection with the liquidation of moral obligations incurred under the production adjustment programs initiated under authority contained in section 12(b) of the Agricultural Adjustment Act of May 12, 1933, and which were invalidated by the Supreme Court decision in the case of United States vs. Butler.

Pursuant to Public Law 589, 77th Congress, approved June 5, 1942 a total of $250,532 has been covered into the Surplus Fund of the Treasury.

(i) Administrative Expenses, Payments for Agricultural Adjustment

This Budget schedule reflects obligations under the $25,000 reappropriated by Public Law 589,77th Congress, approved June 5, 1942, from the unobligated balance of the appropriation of $296,185,000 provided by the Act of February 11, 1936, for administrative expenses in connection with the settlement of claims and accounts incident to the agricultural adjustment programs in effect prior to January 6, 1936, under the Agricultural Adjustment Act of 1933, as amended, and related legislation.

(j) Salaries and Expenses, Agricultural Adjustment Administration

This Budget schedule reflects the allotments and transfers to other agencies of the Department from the unobligated balance of the sum of $100,000,000 appropriated in accordance with the provisions of Section 12(a), title I, of the Act of May 12, 1933. Under authority contained in the Agricultural Appropriation Act, allotments and transfers are made from this fund to International Production Control Committees, and to the Bureau of Animal Industry for "Marketing Agreements, hog-cholera virus and serum". Detailed shedules of obligations for these two items appear in the Budget under the titles of the respective agencies.

(k) Emergency Fund for the President, National Defense, (Allotment to Agriculture)(Agricultural Adjustment Agency)

This Budget schedule for 1943 covers the unobligated balance of the allotment made to the Agricultural Adjustment Agency for payment of travel and special per diem allowances in connection with decentralization of employees from Washington to various points in the field.

This Budget schedule for 1944 covers the unallotted balance of $50,000 of the allocation of $1,800,000 made to the War Food Administration for administering the Dairy Feed Payment Program of the Commodity Credit Corporation. Since the budget schedules were prepared this $50,000 balance has been allotted to the Commodity Credit Corporation to cover the cost of printing certain forms required for the program. The program in the field is being administered by the AAA through its State offices and the County Agricultural Conservation Associations. The remaining $1,750,000 was transferred to AAA in connection with this activity, $136,000 to "Administrative Expenses, Agricultural Adjustment Agency" for State expenses, and $1,614,000 to "Local Administration, Section 388, Agricultural Adjustment Act of 1938" for county expenses.

(l) Moisture Content and Grade Determinations for Commodity Credit Corporation

This Budget schedule reflects obligations for administrative expenses of the Agricultural Adjustment Agency in inspecting, sampling, grading, sealing, testing, and other work incident to the storing of grain and potatoes and making loans thereon under the commodity loan programs.

Since the Agricultural Adjustment Agency has in its field offices equipment and facilities for making the moisture tests which are the final factors in determing grades and loan eligibility of the harvested crop offered as collateral security for loans, the Commodity Credit Corporation avails itself of such services, facilities and personnel in accordance with section 302(i) of the Agricultural Adjustment Act of 1938, as amended.

Funds are advanced by the Commodity Credit Corporation for paying obligations incurred by the Agricultural Adjustment Agency in rendering these services, which funds are deposited to a trust receipt account and appropriated therefrom to the trust expenditure account "Moisture Content and Grade Determinations for Commodity Credit Corporation".

(m) Indemnity Fund, County Associations

This Budget schedule covers assessments made against the county agricultural conservation associations to insure the United States of America, the county agricultural conservation association, and any other agencies or persons deemed by the Agricultural Adjustment Agency to be entitled to reimbursement for losses of money or any other property caused by negligence or willful malfeasance of an officer or employee of the association.

(n) Undistributed Cotton Price Adjustment Payments

This Budget schedule covers 1935 cotton price adjustment payments which could not be paid to persons entitled thereto by the trustees who received the payments under such program.

(o) Processing Taxes, Sugar, Puerto Rico

This Budget schedule covers taxes collected from the processing of sugarcane in Puerto Rico, and held as a separate fund to be used and expended for the benefit of agriculture as the Secretary of Agriculture, with the approval of the President, shall direct.

(p) Processing Taxes, Sugar, Hawaii

This Budget schedule covers taxes collected from the processing of sugarcane in the Territory of Hawaii, and held as a separate fund to be used and expended for the benefit of Agriculture as the Secretary of Agriculture with the approval of the President, shall direct.

(q) Proceeds, Distilled Spirits Industry, Parity Payments

This Budget schedule covers funds collected under Marketing Agreement No. 27, entered into by certain members of the distilled spirits industry and the Secretary of Agriculture (Sections 2 and 8, Act May 12, 1933, 48 Stat., pp. 31-41; U.S.C., Title 5, Sections 601-622).

STATEMENT OF OBLIGATIONS UNDER
SUPPLEMENT I FUNDS

Item	Obligations 1943	Estimated obligations 1944	Estimated obligations 1945
Administration of Sugar Act: For conditional payments to sugar growers under Title III of the Sugar Act	$55,359,282	$53,691,036	$51,317,665
Exportation and Domestic Consumption of Agricultural Commodities: For production payments on potatoes and commercial truck crops	33,750,000	--	--
Working Funds, Agricultural Adjustment Agency (Advances from War Dept.):			
Indexing and preparation of aerial photographs for mosaics and charting purposes for Army Air Force	--	55,000	--
Preparation of Photographic reproductions for Central Film Library, War Department	--	33,000	--
Preparation of Link Trainer Mosaic Strips	195,000		
Total, Working funds	195,000	88,000	--
Payments for Agricultural Adjustment: Administrative expenses in settlement of claims in connection with programs initiated under section 12(b) of Agricultural Adjustment Act of May 12, 1933	3,490	--	--

Item	Obligations 1943	Estimated obligations 1944	Estimated obligations 1945
Administrative Expense, Payments for Agricultural Adjustment: Administrative expenses in settlement of claims incident to agricultural adjustment programs in effect prior to January 6, 1936:	90	24,910	--
Emergency Fund for the President, National Defense: Expenses in connection with decentralization of employees from Washington, D.C. to various points in the field	730	--	--
Moisture Content and Grade Determinations for Commodity Credit Corporation: Expenses of inspecting, sampling, grading, sealing, testing, and other work incident to storing grain and potatoes and making loans thereon under the Commodity loan program	7,645	6,495	6,495
Indemnity Fund, County Associations: Reimbursement to United States and other agencies or persons for losses caused by negligence or willful malfeasance by an employee of the county agricultural conservation associations	118	350	350

Item	Obligations 1943	Estimated obligations 1944	Estimated obligations 1945
Undistributed Cotton Price Adjustment Payments:			
Cotton price adjustment payments which could not be paid to persons entitled thereto by the trustees who received the payments under such program	1,647	1,000	1,000
Total, Obligations under supplemental funds	89,318,002	53,811,791	51,325,510

FEDERAL CROP INSURANCE ACT

(a) Administrative and Operating Expenses

Appropriation Act, 1944	$3,500,000
Budget estimate, 1945	5,997,433
Increase	+ 2,497,433

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Federal Crop Insurance Corporation field offices: Approval of bases for crop insurance yield and premium rates in individual counties; and accounting for and verification of premiums collected and indemnities paid	$795,703	$696,206	$765,577	+$69,371 (1)
2. Storage costs and other direct expenses incident to the acquisition, maintenance, and sale of commodity reserves (except transportation)	210,501	50,000	- -	- 50,000 (2)
3. General administration, program planning and direction, and supervision of purchase, storage, and sale of commodity reserves	549,008	436,522	655,077	+ 218,555 (3)
Covered into Treasury in accordance with Public Law 674	42,537	- -	- -	- -
Allotment and continuing transfers to other appropriations and departments (as shown in Budget schedules)	4,909,524	1,817,272	4,576,779	+2,759,507(4)
Estimated savings, unobligated balance	1,820,639	500,000	- -	- 500,000 (5)
Total available	8,327,912	3,500,000	5,997,433	+2,497,433
Transfers in prior year estimates to other appropriations (as shown in Budget schedules)	+245,042	- -	- -	
Total estimate or appropriation	8,572,954	3,500,000	5,997,433	

INCREASES AND DECREASES

In accordance with the 1944 Agricultural Appropriation Act, the work of the Federal Crop Insurance Corporation during the fiscal year 1944 has been directed to the liquidation of insurance contracts on wheat and cotton crops planted prior to July 31, 1943. The 1945 Budget estimate provides for the reinstatement of the crop insurance program effective with the 1945 crop year. For this purpose, a net increase of $2,497,433 is requested, and is explained by projects, as follows:

(1) An increase of $69,371 under the project "Federal Crop Insurance Corporation field offices: Approval of bases for crop insurance yield and premium rates in individual counties; and accounting for and verification of premiums collected and indemnities paid."

This project covers the cost of maintaining the Corporation's branch offices located at Chicago, Illinois; Denver, Colorado; Birmingham, Alabama; and Dallas, Texas. These offices are responsible for the approval, processing and recording of insurance transactions originated by the County Agricultural Conservation Committees of the Agricultural Adjustment Agency in their contacts with farmers. During the fiscal year 1944 they have been engaged in the liquidation of 1943 crop year insurance; that is, the computation and recording of premiums, and the auditing and paying of indemnity claims on such insurance.

As a result of the limitation in the 1944 Act, branch office personnel has been reduced, particularly in employees engaged in the verification and approval of premium rates and yields. From July to December 1943, field personnel were reduced from 324 to 231, a reduction of 93 employees.

Inasmuch as the estimate for 1945 is based on the continuation of the crop insurance program, it will be necessary to restaff branch offices to the extent needed to renew normal operations. However, the 1945 estimate does not provide a full complement of personnel for the approval and payment of indemnity claims, since due to the lapse of the 1944 program, claims will not be submitted in any material number until the 1946 fiscal year.

The 1945 estimate is $30,126 less than the actual obligations incurred during the 1943 fiscal year, a full program year. This is mainly attributable to an estimated decrease of 50.4 man years in personal services amounting to $71,736, which is partially offset by an increase in overtime pay of $42,292. The decrease in personal services of $71,736 is due to the fact that a full complement of personnel will not be required to process indemnity claims in 1945.

(2) A decrease of $50,000 under the project "Storage costs and other direct expenses incident to the acquisition, maintenance, and sale of commodity reserves (except transportation)."

To avoid loss from rising prices during the period between fixing the prices for premiums and fixing the prices for indemnities, the Corporation acquires wheat and cotton stocks at the maturity dates of notes to

the extent of commodity premiums, plus the excess of indemnities over premiums. As indemnities are paid, commodity stocks are sold by the Corporation in the amount of the commodity indemnities liquidated. Because of the lapse of the 1944 program year no price protection activities will be required in the 1945 fiscal year.

(3) An increase of $218,555 under the project "General administration, program planning and direction, and supervision of purchase, storage, and sale of commodity reserves."

Beginning with the 1944 fiscal year, actuarial work and development of procedures was discontinued. As a result, the personnel of the Headquarters Office of the Corporation was reduced from 146 to 76 from July to December 1943, a reduction of 70 employees.

With the continuation of the crop insurance program, after the lapse of the 1944 program year, it is estimated that an increase of $218,555 will be required to prepare and administer this project in the fiscal year 1945. This increase is attributable primarily to the restoration of the crop insurance program in 1945.

The 1945 estimate is $106,069 in excess of the actual obligations incurred during the 1943 fiscal year, a full program year. This is almost entirely due to an estimated increase of 6.8 man years in personal services amounting to $22,718, an increase in overtime pay of $42,065, and an increase in the estimate for printing and binding of $39,668.

Due to the lapse of the program in 1944 and the consequent discontinuance of actuarial development work, additional funds for personal services will be required in 1945 to bring the actuarial history up to date so that appropriate revisions can be made in insured yields and premium rates.

The program forms of the Corporation are practically exhausted. No provision was made from the Corporation's funds for printing and binding expense for the 1944 fiscal year. It is estimated that the cost of required forms in 1945 will amount to $40,000.

(4) A net increase of $2,759,507 for transfers to agencies cooperating and assisting the Corporation consisting of:

(a) An increase of $2,761,100 in the 1945 estimates over the fiscal year 1944 to renew insurance activities performed by the Agricultural Adjustment Agency for the Corporation. These functions consist of the field work carried on in the States and Counties involving the selling of insurance, determination of insured acreage, adjusting of losses, and other related duties performed under regulations and procedures prescribed by the Corporation.

There is a decrease of $323479 in the amount proposed to be transferred to this Agency in 1945 compared with the actual obligations for the fiscal year 1943, a full program year. This decrease is attributable to the fact that these insurance activities in the 1945 fiscal year will pertain mostly to the 1945 crop year program.

(b) A decrease of $1,593 in transfers required by the Treasury Department for the issuance and clearance of checks and deposits of funds.

(5) Estimated savings of $500,000 in 1944 Appropriation.

The foregoing increase and decreases indicate a net increase of $2,997,433 in estimated obligations in 1945 above 1944. However, due to an estimated saving of $500,000 in 1944 resulting from a present determination that funds appropriated in 1944 will exceed requirements in 1944 for liquidation of existing insurance contracts, the net increase in 1945 above the 1944 appropriation is only $2,497,433.

CHANGE IN LANGUAGE

The estimates include proposed changes in the language of this item as follows (new language underscored, deleted matter enclosed with brackets):

> Administrative and operating expenses: For operating and administrative expenses under the Federal Crop Insurance Act, approved February 16, 1938, as amended (7 U.S.C. 1501-1518[; 55 Stat. 255-256]), [$3,500,000] $5,997,433, including the employment of persons and means in the District of Columbia and elsewhere, printing and binding, purchase of lawbooks, books of reference, periodicals, and newspapers [: Provided, That no part of this appropriation shall be used for or in connection with the insurance of wheat and cotton crops planted subsequent to July 31, 1943, or for any other purpose except in connection with the liquidation of insurance contracts on the wheat and cotton crops planted prior to July 31, 1943].

The elimination of the proviso prohibiting the insurance of wheat and cotton crops planted subsequent to July 31, 1943, is necessary to continue the crop insurance program effective with the 1945 crop year.

The appropriation language proposed for fiscal year 1945 makes no attempt to define the status of 3-year contracts executed prior to July 12, 1943, since it is believed that they were terminated by the provisions of the 1944 Agricultural Appropriation Act and that it would be desirable to make future insurance available only under new contracts. If such is not in keeping with the intent of the Congress, it would seem advisable to clarify the status of these contracts by inserting an appropriate proviso in the language of the 1945 appropriation act.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$218,021	$217,155	$217,155
Additional funds for overtime (appropriated, 1943; estimated supplemental, 1944; and included in budget estimate, 1945)	- -	- -	113,808
Total cost of overtime (7 months in 1943)	218,021	217,155	330,963

Note: Overtime costs and amounts absorbed include, on an estimated basis, an allocable portion of the overtime costs shown in the Budget schedules for the consolicated account "Administrative expenses, Agricultural Adjustment Agency" which consists entirely of transfers from various appropriations and other funds.

WORK UNDER THIS APPROPRIATION

Objective: To provide protection to wheat and cotton farmers by offering all-risk insurance against natural production hazards.

Problem and Significance: The reinstatement of the crop insurance program after the lapse of only one year, during which the necessary operations of the Corporation have been maintained, will make it possible to operate the program with a minimum of loss in operating efficiency and interruption in the continuity of the records.

Although the program was discontinued for 1944, the soundness of the principle of crop insurance or the need for crop insurance by farmers has not been questioned. The existing program was questioned principally on two points: i.e., that losses had materially exceeded premiums, and that crop insurance was not carried by the majority of farmers.

Insurance losses were higher than originally contemplated. Changes have been made from time to time to remedy this situation as experience showed where correction was needed. These improvements as they apply to wheat insurance include among others (1) the use of a 3-year contract adopted in 1943 instead of an annual contract, (2) an increase in average premium rates of approximately 11 percent from 1940 to 1943, and (3) a provision which will be included in future contracts whereby indemnities will be decreased to reflect savings in cost of production due to failure to complete a crop on abandoned acreage. It is estimated that if these provisions had been in effect for the first four years they would have resulted in the following decreases in the net loss, which after four years was 20,590,571 bushels.

1. Use of a term contract ..... 5,400,000 bushels

2. Use of 1943 premium rates instead of earlier rates ..... 4,200,000 bushels

3. Reduction in indemnities on acreage abandoned 9,900,000 bushels

In addition to the financial benefits that should arise from the improvements outlined above in the basic structure of the insurance plan, benefits may be expected from improved administration arising out of experience gained by personnel engaged in the operation of the program.

The changes already brought about or proposed for adoption together with the experience gained in operating the program indicates that a sound insurance plan is possible of achievement.

Although crop insurance has been in effect for five years, improvements have been made with much less than five years' loss experience as a guide. Loss experience does not become available for use in planning the program and computing premium rates until the second year thereafter. Major changes were made in 1940, the second year of the program, in operating methods and actuarial structure and as a consequence, the loss experience for 1939 was not considered entirely applicable for making changes in subsequent years. The loss experience for 1940 became available in time to plan and prepare the 1942 program for wheat. Although an additional year of loss experience, 1941, was available for preparing the 1943 insurance program, the losses in 1943 will reflect some influence of the discontinuance last summer of the crop insurance program. Thus of the five years, 1942 was the only year of wheat insurance in which applicable loss experience was available for a program that was carried on without interruption. The cotton insurance program for 1943 was prepared before any loss experience under cotton insurance was available to be used as a guide.

During the five years of Federal Crop Insurance, a total of about 2,100,000 wheat and cotton farms have been insured, representing a coverage of 56,000,000 acres. During this time, a total insured production of 448,000,000 bushels of wheat and 1,700,000 bales of cotton has been guaranteed. Insurance applications were submitted for 487,000 wheat farms in 1943. This represents about one-third of all wheat farms in the United States, and approaches in only 5 years operation the 50 percent participation which the President's Committee on crop insurance in 1936 estimated as a reasonable expectation of the proportion of farmers who would purchase insurance. In 1943, the second year of insurance for cotton, 177,000 cotton farms, or about one-seventh of the total were insured.

Crop insurance, when firmly established and widely participated in, would be an important feature in the security of the American farmer. Definite progress has been made by the Federal Government in establishing a system of all-risk crop insurance, a type of insurance not available through private companies. The only crop insurance protection offered farmers by private companies is limited to insurance against such specific risks as hail and fire. Only from 5 to 6 percent of the Corporation's losses have occurred from these causes. The principal causes of crop insurance losses have been drought, floods, winterkill, excessive moisture, and insects.

Plan and Progress of Work: Starting with the 1939 wheat crop and the 1942 cotton crop, insurance has been available to producers of wheat and cotton on a basis of guaranteeing a yield of 75 percent or 50 percent of the average yield. In connection with the actuarial phases, average yields and premium rates have been established on approximately 3,000,000 wheat and cotton farms that are eligible for insurance. Insurance has been made available to farmers through their respective state and county agricultural conservation committees who administer the program locally. The approval of the yields and rates, the accounting and auditing of the insurance transactions, and the paying of indemnity claims are centralized in the field offices of the Corporation.

As of October 31, 1943, indemnities amounting to about $73,000,000 have been paid to wheat and cotton farmers since the inception of the crop insurance program. Of this amount $50,000,000 represents premiums which have been paid by farmers. The remaining $23,000,000 represents a net loss on insurance operations. Due to heavy losses from floods in the spring of 1943, this loss may reach $30,000,000 by the time operations for the 1943 crop year are completed.

In view of the proviso in the 1944 Agricultural Appropriation Act prohibiting the writing of insurance on crops planted subsequent to July 31, 1943, notices were sent to all farmers having the 3-year wheat contracts, informing them that any wheat crop planted after July 31, 1943, would not be insured under such contracts.

Indemnities are now being paid on 1943 crops, all work involving formulation of future programs having been discontinued in keeping with the apparent intent of the Congress. Reductions in personnel are being effected as the work load decreases.

(b) Emergency Fund for the President, National Defense (Transfer to Federal Crop Insurance Corporation)

This budget schedule covers obligations under a transfer to the Federal Crop Insurance Corporation for expenses in connection with the decentralization of employees from Washington, D. C. to St. Louis, Missouri.

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS

Item	Obligations, 1943	Estimated obligations, 1944	Estimated obligations, 1945
Emergency fund for the President, National Defense: For expenses in connection with decentralization of employees from Washington, D.C. to St. Louis, Missouri	$494	- -	- -

Administration of Federal Crop Insurance Act

VOLUME OF WORK - COTTON CROP INSURANCE PROGRAM
As at December 31, 1943

	1942 Actual	1943 Estimated	1944 Estimated	1945 Estimated	Maximum Estimated
1. Number of insurance or production units insured	171,420	177,296	.....	440,000	500,000
2. Premiums collected (pounds of lint)	31,444,623	30,792,724	.....	72,000,000	82,000,000
(bales)	62,889	61,585	.....	150,000	171,000
3. Insured acreage (gross)	2,819,123*	3,242,000	.....	6,000,000	7,000,000
4. Insured production (bales of lint cotton)	843,396*	850,000	.....	2,000,000	3,000,000
5. Loss claims approved for payment	47,715	42,000	.....	Note	Note
6. Indemnities approved for payment (pounds of lint)	52,504,052	45,500,000	.....	Note	Note
7. Number of states writing crop insurance	18	18	.....	19	19
8. Number of counties writing crop insurance	930	901	.....	950	990
9. Number of states for which yield and rate data established	19	19	.....	19	.....
10. Number of counties for which yield and rate data established ...	997	993	.....	1,000	.....

Note: Not practical to forecast crop results for this statement.

*Estimated

Administration of Federal Crop Insurance Act

VOLUME OF WORK - WHEAT CROP INSURANCE PROGRAM
As at December 31, 1943

	1939 Actual	1940 Actual	1941 Actual	1942 Actual	1943 Estimated	1944 Estimated	1945 Estimated	Maximum Estimated
1. Number of applications received	165,775	379,710	420,940	393,867	375,268	.....	400,000	.....
2. Number of farms covered by applications received	165,775	379,710	420,940	504,047	487,681	.....	510,000	
3. Number of contracts in force	165,775	360,596	371,392	323,282	315,225	.....	336,000	700,000
4. Number of farms covered by contracts in force	165,775	360,596	371,392	400,067	393,998	.....	413,100	800,000
5. Premiums collected (bushels)	6,670,316	13,796,798	12,643,073	8,770,660	8,547,642	.....	9,000,000	28,000,000
6. Insured acreage	7,010,390	12,754,834	11,734,263	9,631,000*	9,000,000	.....	9,100,000	25,000,000
7. Insured production (bushels)	60,826,075	108,284,574	104,306,380	88,063,150*	87,000,000	.....	90,000,000	220,000,000
8. Loss claims approved for payment	55,932	112,762	130,770	108,499	149,738	.....	Note	Note
9. Indemnities approved for payment (bushels)	10,163,899	22,899,156	18,854,417	10,573,816	12,991,304	.....	Note	Note
10. Number of states writing crop insurance	31	33	36	36	36	.....	36	36
11. Number of counties writing crop insurance	1,289	1,436	1,463	1,602	1,645	.....	1,650	1,700
12. Number of states for which yield and rate data established	36	36	36	36	36	.....	36	36
13. Number of counties for which yield and rate data established	1,810	1,820	1,822	1,918	2,017	.....	2,035	2,200

The difference between applications received and contracts in force is due to cancelations, rejections, and no wheat seeded cases.

During the 1939, 1940, and 1941 programs a separate contract was written for each farm. Beginning with the 1942 program one contract is written covering all of the farms in one county owned or operated by one person.

Note: Not practical to forecast crop results for this statement.

*Estimated

SOIL CONSERVATION SERVICE

(a) General Administrative Expenses

Appropriation Act, 1944	$401,315
Proposed consolidation of this item in the 1945 estimates by transfer to:	
"Salaries and expenses, Soil Conservation Service", soil conservation research	- 19,460
"Salaries and expenses, Soil Conservation Service", soil conservation operations	-381,855
Total anticipated available, 1944	- -
Budget estimate, 1945	- -

CHANGE IN LANGUAGE

The estimates propose the deletion of the language of this item as follows (deleted matter enclosed with brackets):

> [/]General administrative expenses: for necessary expenses for general administrative purposes, including the salary of the Chief of the Soil Conservation Service, and other personal services, in the District of Columbia, $401,315: Provided that no part of the money appropriated in this paragraph shall be available for expenditure if any emergency appropriations are made available for administrative expenses in administering the funds provided in regular appropriations to the Soil Conservation Service.[/]

This change in language deletes the entire item of "general administrative expenses". The budget estimates propose that this appropriation be transferred to and consolidated under the following:

"Salaries and expenses, Soil Conservation Service", soil conservation research; and "Salaries and expenses, Soil Conservation Service", soil conservation operations.

This consolidation will permit greater flexibility in the use of funds as between the department and the field and thereby provide more effective use of funds appropriated. The provision limiting the amount which may be expended for personal services in the District of Columbia is still retained.

(b) Soil Conservation Research

Appropriation Act, 1944 (Includes $19,460 transferred from "Salaries and expenses, Soil Conservation Service", general administrative expenses	$1,091,033
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+ 161,676
Total anticipated available, 1944	1,252,709
Budget estimate, 1945	1,225,000
Decrease	- 27,709

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Investigations of the principles involved in soil and water conservation, and methods for their practical application on the farm	$ 600,464	$ 628,658	$ 622,481	- $ 6,177
2. Watershed investigations of the effect of land use practices on run-off as related to the methods of control of erosion and floods	364,072	320,847	315,216	- 5,631
3. Investigations of sedimentation resulting from erosion	78,109	51,564	44,497	- 7,067
4. Investigations of geographic and climatic factors related to erosion	52,479	13,179	10,405	- 2,774
5. Investigations of the economics of soil and water conservation	66,616	42,053	35,993	- 6,060
6. Investigations of erosion-resisting plants of economic value	77,335	68,732	68,732	
7. Farm irrigation investigations	90,434	89,095	89,095	
8. Farm drainage investigations	36,945	38,581	38,581	
Unobligated balance	59,089	---	---	---
Total available	1,425,543	1,252,709	1,225,000	- 27,709(1)
Anticipated deficiency for overtime pay	---	- 161,676	---	
Total estimate or appropriation	1,425,543	1,091,033	1,225,000	

INCREASES OR DECREASES

(1) The decrease of $27,709 in the Soil Conservation Research item for 1945 consists of decreases in five financial projects, all due to the exclusion from the 1945 budget of terminal leave and other incidental items of expense that were budgeted in 1944 for various research projects which were discontinued as a result of the reduction in the 1944 appropriation.

CHANGE IN LANGUAGE

The estimates include proposed changes in the language of this item as follows (new language underscored, deleted matter enclosed in brackets):

> Soil [and moisture] conservation [and land-use investigations] research: For research and investigations into the character, cause, extent, history, and effects of erosion, soil and moisture depletion and methods of soil and moisture conservation (including the construction and hydrologic phases of farm irrigation and land drainage); and for construction, operation, and maintenance of experimental watersheds, stations, laboratories, plots, and installations, [$1,071,573] $1,225,000.

The change in language eliminates the words "and moisture" and substitutes the word "research" for the phrase "and land-use investigations" for the sole purpose of shortening the title of the item.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*$34,446	---	---
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; and included in budget estimate, 1945)	61,280	$161,676	$157,414
Total cost of overtime (7 months in 1943)	95,726	161,676	157,414

*Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To develop efficient and practical soil and water conservation methods and practices which will serve as a guide for the conservation operations program of the Soil Conservation Service and the programs of other Federal and state agencies which relate to conservation work and sound land use.

The Problem and its Significance: Experience has shown that soil and water conservation research pays dividends in the form of increased and sustained crop yields. Land must be used for the purposes to which it is adapted if farming is to be successful and soil depletion eliminated. Exploitive farming practices are wasteful and expensive and should be replaced by sound soil and water conserving practices which are based upon facts established by conservation research and not upon estimates or guesses. Established practices must frequently be modified to meet peculiar local conditions. The new or improved practices to be recommended must be developed by field trials and tests.

Demands for increased production cause new lands subject to severe wind and water erosion to be placed in production and the repeated use of land for cultivated crops. This can be done safely and effectively only by the introduction of conservation practices into the farming program. Research into the character, causes, extent, and effect of soil erosion and water depletion has indicated promising new practices and farming methods. In many cases, however, these practices have not been developed to the point where they can be applied with assurance over areas varying in soils, climate and agricultural practices. A large part of the work under this item now deals with the development of means for application of conservation principles in connection with an increase of row crop production in soybeans, peanuts, potatoes, and other special war crops.

Much information developed in connection with the regular research program of the Service has been found to be of vital importance to the military and naval authorities. At their request and with their cooperation, several lines of research have been intensified and extended in order to provide the information required.

Practically all of the conservation research work conducted in the United States by the Federal Government which is directly aimed at erosion control and water conservation on farm lands is financed under this sub-appropriation.

General Plan: Formerly, many research findings in agriculture were put into effect by a slow educational process. Often a decade elapsed between discovery and application. With the advent of the Soil Conservation Service as an action agency, the facility for immediate application of special research findings was provided. No research is undertaken except on problems the solution of which is considered by farmers or field technicians to be necessary for the program of conservation. The research work on the problem is usually conducted in three steps; first, the laboratory or plot work for basic information; second, the Experiment Station field scale trials of practices, and, third, the adjustment and modification of these practices for application on extensive areas often including development or modification of farm equipment or methods.

The program of research is cooperative with State experiment stations and other agricultural agencies of the Department and States. The State agencies, by agreement with the Secretary of Agriculture, cooperate with the Soil Conservation Service in the conduct of the work, and as far as possible furnish land, laboratories, office facilities, and technical assistance. The research work of the Service is correlated with that of the Agricultural Research Administration, thus avoiding duplication and assuring desirable cooperation with other research bureaus. As soon as the trend of results from a study can be perceived, measures promising to control runoff and erosion are developed and tested and put into application by operations technicians. Field tests and evaluations of practices are particularly important in developing and putting into immediate application sound programs in the conservation districts.

The current program of research in conservation is based on an appropriation that represents, (exclusive of overtime costs), a reduction of $267,856 from the amount available for the fiscal year 1943, and $428,427 from the amount available for the fiscal year 1942. These reductions were met by the elimination of projects less directly concerned with the production of food, fiber, and oils and the reduction of all continuing work to a minimum operating basis.

Examples of Progress and Current Program: Examples of recent accomplishments under this sub-appropriation are cited to show progress being made and studies on which special emphasis is now being placed are explained under the following seven projects:

1. Investigations of the principles involved in soil and moisture conservation, and methods for their practical application on the farm: Work under this project is conducted at 65 locations in 38 states, and consists of investigations of the soil characteristics that are basic in development of measures for conserving soil and water, the effect of crops and cropping systems on erosion, water losses, and crop yields, water conservation practices for arid and semi-arid regions, and control of wind erosion. Precise determinations of physical and chemical properties of representative soil types correlated with the character and extent of erosion, degree of slope, and climatic conditions are being made as well as the rates of soil removal and water runoff. Related studies on methods of control of soil and water losses, by use of vegetation and mechanical means are being conducted for each problem type area and climatic influence. The results of these studies are made immediately available to the field agencies and later to the public through scientific publications, papers read at scientific meetings, newspaper releases and farmer magazine articles. These publications and all station data released have been directed toward the development of a sustained, non-depleting, soil building agriculture. All of the past accumulation of information as well as the findings of the active research studies under way at the present time are being reviewed and interpreted in the light of the urgent need for maximum production of agricultural products. Methods of land use which will utilize the maximum ability of each class of land, and which will draw upon the reserves of soil fertility without destruction of the soil body itself are being developed.

Information on the degree of erosion and water loss which must be anticipated on various soil types, degree and length of slopes, under varied climatic conditions, crop usage, and methods of control of the agencies of soil and water loss is provided to State War Boards and other field production planning agencies which are interested in increasing the acreage of critical crops. This information is used to develop land use capability classes and zonal production areas for livestock production and for different classes of cultivated crops, and to determine the total increases in each commodity which each State is capable of producing. The States of Iowa and Illinois are outstanding examples of how conservation data are being used to establish production zones and crop acreage and livestock production goals.

Increased production through increased per acre yields offers a more unlimited field than that of increased acreage. As crop yields depend upon the intricate balance of soil properties, nutritional needs of the crops and favorable weather conditions, consideration is given to each and especially to the proper balancing of one factor against the others.

The most common limiting factor in plant growth and yield is water. The production of an average crop requires that 20 inches of water be placed in the soil in which it grows. For extra good yields and the utilization of reserve or added fertility elements, even more water is needed. This is water that enters the root zone of the plants--not total rainfall--of which from one-third to one-half is ordinarily lost as runoff. In Iowa, Nebraska, Illinois and other areas, it has been found that each additional inch of water above average will produce from 5 to 7 more bushels of corn per acre. Even in areas of high rainfall such as the Atlantic Seaboard 35 to 57 days per year have been shown to be in need of more water than that provided by rainfall.

Methods of holding a much larger proportion of the water and storing it in the soil are being developed for many areas and include such practices as mulching, subsurface tillage, contour tillage, application of organic matter, water spreading, and winter cover crops. Results from field trials last year showed increases in yield ranging from 10 to 20 percent as a result of such practices.

Field trials of rotations and practices are conducted in cooperation with the State Agricultural Experiment Station, Extension Service and Soil Conservation Districts on field size "pilot plant" trials on district farmers' fields. This is done to insure the most rapid spread of practices capable of conserving water and increasing production and to insure that these practices are modified or adjusted to fit the conditions of crop, soil or climate of the area in which they are to be used. The following types of field application research are typical of the many that have been made this year or are planned for next year in each of the states in which the Service carries on research work:

(a) Application of new methods of establishing sweet clover on idle land preparatory to the growing of field crops or for supplemental pasture.
(b) Contour methods of growing potatoes to prevent soil loss and increase yield.
(c) Use and management of cover crops on corn and potato land to prevent soil loss and increase crop yield.
(d) Application of a straw or vegetative mulch in connection with the growing of grapes and truck crops.
(e) Field trials on renovating and treating pastures for best erosion control and higher production.
(f) Field application of methods of protection against erosion and increasing the crop yields by using different legumes in the rotation.

(g) Increasing the pasture days by new management practices of pastures.
(h) Field application trials on the use of crop residues, with and without fertilizers, and observance of the effect on runoff, soil loss and crop yields.
(i) Application of new methods of revegetating some of the depleted range lands and abandoned crop lands.
(j) Trials on water spreading to use runoff water from non-crop areas for increasing the yield of farm crops.

2. Watershed investigations of the effect of land use practices on runoff as related to the methods of control of erosion and floods: The work conducted under this project consists of determining the effects of land use practices on rates and amounts of runoff from watersheds located in the important agricultural areas of the United States, and investigating hydraulic problems related to the development of economical methods and structures for disposing of runoff from farm land. Accurate information on the magnitude of the runoff is essential for the economical design of channels, spillways, check dams, culverts, and other hydraulic works used in soil and water conservation operations. A lack of dependable information often results in the failure of such works. Information on the influence of land use practices on the runoff and erosion from watersheds is needed in planning improvements of soil and water conservation practices and better use of water resources.

Studies of the hydrologic importance of mulch on watershed behavior have been continued at the stations at Hastings, Nebraska; LaFayette, Indiana; College Park, Maryland; Cherokee, Oklahoma; East Lansing, Michigan; and Coshocton, Ohio. From the subsurface tillage experiments on watersheds near Hastings, Nebraska, it was found that in a rotation where wheat follows oats, the practice of subtilling for oats instead of the usual farming practice will increase the amount of available moisture for winter wheat. As much as three inches of water was gained in the first six feet of soil by subtilling the oats soil. Inasmuch as many experimenters have found that the yield of wheat is greatly dependent on the available soil moisture at planting time, the practice of subtilling may be expected to increase wheat yields in this region.

At the Indiana State Experiment Station at LaFayette, it was discovered that contouring of corn on small watersheds with average slopes of 2 to 3 percent resulted in 47 percent less runoff during the growing season than occurred on similar watersheds with corn check-rowed. Measurements made in August showed 50 percent more moisture available for crops in the upper 14 inches of soil on contoured corn than on the check-rowed corn. Moisture deficiency frequently limits the corn crop in this locality and it can be concluded that contouring corn even on relatively gentle slopes materially reduces an important production hazard.

At the Hydraulic Laboratory at Pasadena, California, a new and improved structure has been developed for stilling high velocity pipe flow so that it can be discharged into a natural earth channel without causing appreciable erosion.

Summaries of the data collected on runoff studies have been furnished Soil Conservation Service engineers and farm planners and have proved of great assistance in the design of erosion control structures, terrace outlet channels, spillways, check dams, culverts, and diversion ditches. These data have also been furnished to the War Department for use in dealing with runoff and drainage problems in Army camps and airports and to the Public Roads Administration and State Highway Departments for use in designing culverts, weirs, check dams, and diversion ditches along highways.

A bulletin entitled "Tests on Vegetated Waterways" has been published in cooperation with the Oklahoma Agricultural Experiment Station. It contains the results of tests of channels lined with different grasses to determine their resistance to erosion in terms of velocity of flowing water and their retardance to flow as measured by the amount of water discharged in a given time. This information is especially needed in connection with the design of terrace outlet channels and diversion ditches.

3. Investigations of sedimentation resulting from erosion: The damages resulting from deposits of eroded soil in reservoirs, stream channels, harbors, irrigation ditches, drainage canals, and on valley farm lands amount to at least $100,000,000 annually. The effects of debris deposition are so critical in many areas that farmers and ranchers, power and water companies, railroads, and Federal, State, and local agencies are annually forced to spend several million dollars for control and protective measures. The purpose of research under this project is to develop more efficient, economical, and permanent methods of controlling the movement and deposition of soil waste, and of preventing flood scouring in stream channels and waterways.

Results of studies during the past 8 years on methods of controlling reservoir silting have been described in a Departmental publication issued in October 1943 in response to many inquiries from water-supply power, and irrigation interests for this type of information.

In another publication, the results of studies made of density currents and their effect on reservoir silting has been described. This research has led to installation of novel sluice gates in the new Brighton Dam on the Patuxent River, Maryland, constructed by the Washington Suburban Sanitary Commission, which is currently cooperating with the Service in an experimental program to test the effectiveness of this

installation. The City of Baltimore is studying this development and cooperating on sedimentation studies in connection with proposed water-storage additions. The Southern California Edison Company is cooperating in density current studies at its Big Creek, California, development where silting has forced shut-down of power units from time to time.

Investigations are being made at the cooperative laboratory of the Service and the California Institute of Technology at Pasadena, California, on design of reservoir spillway structures to prevent channel erosion and structural impairment by undercutting at dams.

Requests from conservation district governing bodies and Service farm planners have led to initiation of studies in California on methods of controlling sediment damage and bank erosion on valuable citrus orchard lands.

4. Investigations of the geographic and climatic factors related to erosion: The work under this project is to determine and evaluate the effects of climate and of the various climatic and physiographic factors upon soil and water conservation. The specific objectives of climatic research are the evaluation of local climate on soil and water conservation as a basis for the most effective use of the water resource and the analysis of climatic risks in critical areas as a basis for safe cropping practices.

Records of rainfall, temperature, evaporation and wind movement are secured regularly from established points in the areas where these special conservation studies are carried on. These records on significant weather factors are correlated with the long-time records of Weather Bureau stations within the area, and the direct and indirect influence of local climatic variations on conservation practices are derived. Accurate knowledge of local climatic influences is highly valuable for the purpose of determining critical erosion hazard periods, or probable drought periods and the counter measures for each which will be necessary for adequate control of soil and water losses and use of cropping systems best suited to meet these hazards.

5. Investigations of the economics of soil and water conservation: The work conducted under this project is to determine the effects of soil and water conservation practices and uses of land on the organization, operation, and income of individual farms, and to develop the best methods of management to meet conservation needs. Special consideration is given to conservation practices which increase production immediately and which require a minimum of additional labor, power, and materials.

In planning for maximum food production in Oregon, the possibility of plowing up crested wheatgrass to increase the acreage of wheat and peas was studied. It was found that land-use capabilities in five eastern Oregon counties indicated that about one-half of the 200,000 acres of crested wheatgrass could be plowed up and planted to some crop more valuable at the present time. Somewhat more than one-third of the acreage should not be plowed up on account of lower alternative production possibilities and the risk of endangering the long-time land-use program. The plowing of about one-eighth of the acreage was listed as doubtful because of livestock needs for forage and other factors. This information furnishes a basis for planning most effective present use of the land of that area.

Studies of application of simple conservation practices in Beckham County, Oklahoma reveal that they will not only save soil but will increase the production of needed agricultural products. Alfalfa grown in contour strips controlled erosion, saved moisture, eliminated point and short rows, and produced more feed per acre and per hour of labor than any of the major crops found in the area.

It was found that the carrying capacity of pastures could be doubled, tripled and in some cases increased by four-fold in Oklahoma by soil and water conservation measures. The cash cost of improving these pastures was very low in relation to the benefits received.

Studies in several parts of Illinois have shown that yield increases of 10 to 25 percent may be realized by contour tillage with little or no increase in labor or other cost. In each of several counties included in Soil Conservation Districts, from 1,000 to 12,000 acres are now farmed on the contour.

Economic studies of conservation practices on a 17-cow dairy farm on the North Fork of the John Day River in Oregon, which included development of stock water, increased water available for irrigation, pasture seedings on erodible grain land, deferred spring grazing, and proper stocking of range land, indicated that it was possible after installation of the practices to recommend to reduce the acreage of grain hay, double the production of grain, and increase the production of hay and grass by 17 percent. In addition, the hay now secured is of better quality and the carrying capacity of range land probably will increase under less intensive use during critical seasons of the year.

It was found in Franklin County, North Carolina that the carrying capacity of native permanent pastures was doubled when seeded to a grass-legume mixture and properly fertilized and managed. Pasture

treatment increased the amount of feed obtained from pastures not only during the normal grazing season but lengthened the normal grazing period by one to three months. The availability of improved pastures reduced feed purchases for cows and work stock, increased milk production per cow by 18 percent, and accounted for some additional production of young cattle. The returns above cash expenditures from the average improved pasture amounted to $9 per acre or $48 per farm.

Preliminary analysis of land use capability data in Jackson County, Wisconsin indicates that only one-third of the present acreage of inter-tilled crops can be grown without serious loss of soil unless soil conserving practices are adopted. However, if soil conservation practices were adopted on all farms, the present acreage of inter-tilled crops could be not only maintained, but increased by about 10 percent for an emergency period of one or two years without jeopardizing soil resources.

6. Investigations of erosion-resisting plants of economic value: The work under this project is to provide income-producing crops for land too steep or erodible for ordinary cultivation. The annual cash returns from uncultivated vegetation, such as ordinary forest cover or common pasture, usually are so low that the average farmer in hilly regions cannot make a living if he discontinues production of tilled crops to the extent called for in the erosion-control plans.

Because of the present national emergency, the hillculture studies and developments are being devoted largely to work programs relating directly to the domestic production of plants that yield critical materials or increase food production. Many of these developments are also calculated to aid materially in the post-war periods by making possible safe reclamation of hilly farm land for the relocation of many displaced factory workers and returned soldiers.

Field studies are being made to evaluate the practical possibility of obtaining milkweed floss to replace Java kapok, an important war material, in naval and aviation equipment.

Important progress is being made with the development of American sumac as a source of leather tanning materials to replace foreign sumac. This will provide a new profitable crop for many acres of erodible farm land. Practical development and demonstration of mechanical harvesting and drying to obtain high quality sumac leaf in large quantities is being undertaken cooperatively with the Iowa and Maryland Agricultural Experiment Stations. Programs are underway with cooperating farmers to market at least 200 tons of high quality American sumac during the present season. A large number of high tannin test

sumac selections are being made from planting tests as erosion-resistant crops which may yield essential leather tanning material while profitably protecting the soil against erosion.

Surveys and planting tests with cork oak show that this highly valuable tree can be grown as a new farm crop on hilly land in the humid parts of the Southwest and in the Southeast Coastal States from Louisiana to Virginia, and that the Nation's needs for cork, which is critical material, can be grown and supplied from these areas. The requirements for seedling production and successful planting are being determined. Bark taken from domestic-grown cork oaks has been found by commercial tests to form a satisfactory replacement for foreign cork.

Cooperative tests being conducted in Alabama show that the pods of the native honey locust, a common wild tree of the eastern states, are valuable as cattle feed, either whole or mixed in ground feed as a carbohydrate concentrate to substitute for oats. Seeds of this tree have been tested and found to be an acceptable replacement for certain imported seeds that furnish critical mucilaginous products for sizing paper and other industrial uses. Pasture planting tests of honey locust in Ohio, Iowa, Maryland, and Alabama indicate that it may also have a beneficial effect upon pasture mixtures similar to the beneficial effects shown in earlier tests with black locust and black walnut.

In Alabama, cooperative field tests with rotenone-producing selections of Devil's shoestring indicate that supplies of critically needed rotenone could be grown in that area by growing the high-yielding strains under soil-conserving cultural methods. Vigorous stands of this leguminous ground-cover were obtained from direct seeding on poor land without application of fertilizer.

In Southern California, improved erosion-control practices are being tested and applied in avocado orchards to increase production of avocado fruit, which has augmented importance during the war because of its concentrated food value.

In Maryland, the use of ridged rows across the slope as successfully developed and applied in hillculture tobacco studies has been applied with promising results in the culture of lima beans and edible soybeans on hilly lands where these essential food crops could not be safely grown by ordinary cultural methods.

In Southeastern Iowa, contour planting, together with cultural technique directed toward almost complete protection against erosion, are giving high crop yields of grapes and plums on land areas that are too

steep and erodible for any ordinary cultivation. Similar good results are being obtained in integrated hillside orchard planting in Central Alabama.

7. Farm irrigation investigations: Of the 31,000,000 acres of harvested cropland in the eleven mountain and Pacific States, 13,000,000 acres were irrigated, and irrigated crops to the value of $520,000,000 were raised, in 1939. This is an indication of the importance of water to the land and consequently the necessity to conserve and utilize the available supply to the fullest extent.

Under the stress of war our agricultural output must be increased. Crop failure is less apt to occur under irrigation. The 1940 Census shows crop failures in the State of Oregon for 1939 amounted to only 1.7 percent on irrigated land, whereas on non-irrigated land it was more than twice as great. In the same state, the potato yield from irrigated land in 1939 was 230 bushels per acre, while on non-irrigated land the yield was 107 bushels per acre. This illustrates the value of irrigation water to the western farmer.

Studies now underway by the Irrigation Division include (a) water requirements for irrigation, (b) pumping requirements for irrigation, (c) drainage of irrigated lands, (d) analyses and development of snow survey data for irrigation water supply forecasts, (e) design and invention of apparatus used in farm irrigation, (f) studies of fundamental hydraulics necessary for irrigation enterprises, (g) the organization and operation of irrigation institutions, studies of State water laws and rights, and studies of cost of water and the farmers' ability to pay.

Water supplies are limited, and it is important that irrigation practices be developed to make the best possible use of the existing supplies and that investigations be made to locate other possible sources of supply to supplement that already in use. In many cases, ground water may be extracted from the saturated layers of sand and gravel and raised to the surface by pumping from wells. In certain locations otherwise wasted storm water can be diverted and spread over pervious areas for seepage to underground reservoirs from where it can be later recovered by pumping, but investigations are necessary to locate sites and to develop feasible and economical methods of spreading.

Throughout the irrigated region much of the irrigation water is derived from melting snow on the mountain range. The supply of water available for irrigation during the cropping season should govern the type and acreage of crops to be planted. It is important, therefore, that before planning his crop the irrigation farmer have

information regarding the condition of the snow pack and the probable supply of water held in the snow fields which will later become available for irrigation.

Snow surveys which are the means of gathering data to supply this information are to be expanded. Portions of the survey work and methods are still in the developmental stage. Further studies must be made of the factors which determine runoff. The research phase of this water supply forecasting includes locating and laying out snow courses, evaluating the data gathered by snow surveyors, preparing reports, and providing specialized technical guidance.

A total of $24,287 was expended out of the 1943 appropriation, $18,205 is being used out of the 1944 appropriation, and $18,205 is included in the 1945 budget estimates for the analysis and development of snow survey data for irrigation water supply forecasts. (An additional $85,000 in connection with snow surveys and specialized irrigation assistance is included under the item "Soil Conservation Operations" and discussed on pages 232-233 of these notes.)

The study of the organization and operation of irrigation enterprises has been made by the Division of Irrigation over a series of years with particular reference to their usefulness for various types of irrigation development. They have embraced normal as well as abnormal conditions. During the present emergency when the production of food, fiber and oil is the foremost consideration of the Department, the knowledge of the adaptability of these several forms of organization to extreme conditions is particularly valuable as it enables pointing out ways and means of handling the delivery of water in order to make the most complete utilization of the available supply in crop production. Studies of water laws and water rights of all the Western States have also been made, and these findings are generally accepted as guides in bringing about adjustments that are needed at this time.

Investigations relating to the development of effective and economical methods of reducing seepage losses in irrigation canals have been expanded. In many instances, it has been found that from one-fourth to as much as one-half of the irrigation water supplied to unlined canals and ditches is lost in transmission by seepage and never reaches the cultivated fields. This not only reduces the acreage that can be irrigated with existing supplies, but also results in the water-logging of extensive areas that must be drained before they can be profitably cultivated. Experiments with different kinds of materials and different methods of lining are being carried on at a number of locations to determine practical and economical methods of reducing these seepage losses.

In California, Utah and other Western States, investigations are being carried on, principally in cooperation with State institutions, in order to determine the efficiency of applications of irrigation water. Now that limited water supplies and extremely limited farm labor are the major factors in irrigated crop production, the importance of this project is emphasized. As the result of one study in an important defense center in California, findings have resulted in the regulation of the limited water supply to satisfy the demands of an enormously expanded military development, defense plant industrial and domestic use, and carry on the existing irrigated crop program without material change.

8. Farm Drainage Investigations: The work conducted under this project is to develop improvements in the design, construction, operation, and maintenance of drainage works. There are about 30 million acres of fertile land now under cultivation upon which average crop yields are materially reduced due to poor drainage. The rehabilitation or construction of drainage improvements on such land offers a practical method of materially increasing crop production.

Studies are being carried on in several of the peat and muck areas of the country to determine the effects of drainage on such soils.

In many areas a large amount of hand labor is required to properly maintain field ditches and outlet channels. A ditch bank mower has been developed to replace hand labor in controlling vegetative growth on ditch banks.

The construction of a dragline attachment with a side arm to be mounted on a track-laying tractor is under way. The attachment will enable the tractor to travel along the side of a ditch and clean silt from the bottom without disturbing the side slopes. Indications are that the machine will operate very satisfactorily and materially reduce hand labor requirements. When not in use on drainage work the attachment can be removed from the tractor and the tractor used on general farm work thus reducing the investment in ditch maintenance equipment.

In the sugar cane area of Louisiana, a method of grading the land between ditches in sugar cane fields has been developed that materially improves drainage conditions.

Technical assistance is being furnished to the Bureau of Agricultural Economics in connection with the drainage phase of post war planning.

(c) Soil Conservation Operations

Appropriation Act, 1944 (Includes $381,855 transferred from "Salaries and expenses, Soil Conservation Service", general administrative expenses)	$19,511,855
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+3,285,325
Total anticipated available, 1944	22,797,180
Budget estimate 1945	31,275,000
Increase	+8,477,820

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
1. Soil and water conservation operations in demonstration projects and conservation districts and cooperation with other Federal and state agencies				
a. Soil and water conservation operations in demonstration projects	$655,960	$483,598	$483,598	---
b. Soil and water conservation operations in conservation districts organized under state laws	19,419,061	20,302,257	27,667,981	+$7,365,724(1)
c. Cooperation with other Federal and state agencies	761,475	646,018	1,770,304	+ 1,124,286(2)
Total Project 1	20,836,496	21,431,873	29,921,883	+ 8,490,010
2. Operation of conservation nurseries for furnishing of plants for use in soil and water conservation operations	1,209,260	1,142,549	1,142,549	---
Continuing allotments to other agencies (as shown in Budget Schedules)	102,000	222,758	210,568	- 12,190(3)
Total obligations	22,147,756	22,797,180	31,275,000	+ 8,477,820
Covered into Treasury in accordance with Public Law 674	+ 106,974	---	---	---
Unobligated balance	+ 48,425	---	---	---
Total available	22,303,155	22,797,180	31,275,000	
Transferred to other appropriations (as shown in Budget Schedules)	+ 157,858			
Anticipated deficiency for overtime pay	---	-3,285,325	---	
Total estimate or appropriation	22,461,013	19,511,855	31,275,000	

INCREASES OR DECREASES

The net increase of $8,477,820 (including $1,116,601 for overtime costs) in this item for 1945 is composed of:

(1) An increase of $7,365,724 for soil and water conservation operations in conservation districts organized under state laws as follows:

1.	Assistance to 144 (annual basis) new districts at $20,560 per district (1944 average district cost - $20,590)	$2,960,724
2.	Equipment for conservation districts (1,124 districts estimated on annual basis)....	500,000
3.	246 special drainage and irrigation jobs embracing 938,600 acres at $2.08 per acre (average of $7,932 per job)	1,951,272
4.	Heavy equipment for special drainage and irrigation jobs	508,728
5.	Intensification of work of applying soil conservation practices in 1,124 (annual basis) conservation districts (100 technicians, 2000 temporary conservation aides for 90 days plus miscellaneous expenses)	1,445,000
	Total	7,365,724

Objective: To provide assistance to newly organized districts and increased assistance to present districts in the establishment of conservation practices, and an expansion of the "Widespread Application of Conservation Practices" program (see "General Plan" under "Work Under This Appropriation") to sections of conservation districts which Soil Conservation Service technicians have not as yet been able to reach in their regular farm planning activities. It is also planned, with the increase in funds, to give special assistance to drainage and irrigation groups in conservation districts in order to make additional lands available for cultivation and thus increase food production, to replace existing transportation equipment and heavy equipment on loan to districts which is badly worn, and to purchase additional equipment.

The Problem and its Significance: Unless the application of conservation practices is intensified and spread to more farms and soil deterioration is checked, our chances of maintaining a high production of food, fibre and oil will be greatly reduced. In spite of the progress made in recent years, soil depletion continues at a more rapid rate than soil restoration. Defense of the productive soils of the Nation against misuse and wastage is an absolute requirement for the continued life of the Nation.

Because of the current rapid rate of organization of conservation districts the Service will be unable to meet adequately the demand for technical assistance in planning and applying conservation

practices unless additional resources are provided. Conservation districts are the medium through which erosion control and proper land use can best be effectuated.

Production on a good many farms is curtailed by poorly arranged irrigation systems, and the topography of others is such that irrigation is impossible without land leveling. Better designed layouts will prevent wastage of water, time, soil fertility and top soil. Such present losses can be converted into increased production and higher income. In many sections of the United States, profitable farming is dependent upon artificial drainage of the land. Much additional land that is now too wet to produce good crops could be brought into full production if properly drained.

Farmers generally do not have sufficient heavy equipment such as draglines, crawler tractors, bull dozers, and land levelers, or the technical direction necessary to accomplish land leveling and drainage work. If the government is to get the increased production needed to meet food requirements, it must provide such assistance to groups of farmers who are organized to meet the problems but lack the necessary facilities.

Plan of Work: It is planned with the increase requested to make more planning technicians and conservation aides available per district, and thus accelerate application of conservation practices.

Cooperative arrangements will be worked out with organized farmer groups which need help with difficult drainage and irrigation problems, and such assistance will be furnished with these problems as is beyond the self-help capacity of the farmers. Most of the assistance to be rendered will consist of specialized engineering assistance and the loan of heavy earth-moving equipment. The Service has some of this type of equipment now on loan but considerable additional equipment must be secured before adequate effective assistance can be given.

(2) An increase of $1,124,286 for cooperation with other Federal and state agencies as follows:

1. "Widespread Application of Practices" program outside of conservation districts (125 technicians plus miscellaneous expenses)	$609,286
2. 44 special drainage and irrigation jobs embracing 163,400 acres at $2.08 per acre (average of $7,932 per job)	349,008
3. Heavy equipment for special drainage and irrigation jobs	90,992
4. Snow surveys and related work in Western States	75,000
Total	1,124,286

Objective: To expand the "Widespread Application of Conservation Practices" program to farm and ranch lands outside of districts; furnish special assistance to drainage and irrigation groups in a few areas outside of districts where such activity will bring additional highly fertile lands into immediate production; and to expand the snow survey work now being carried on in the Western States by establishing and maintaining additional snow courses in mountain areas, purchasing equipment and supplies for snow surveyors, and paying salaries and expenses of seasonally employed surveyors.

The Problem and its Significance: Soil conservation practices must be more widely adopted in order to be most effective in checking soil erosion and depletion of fertility. This activity does not contemplate establishment of a complete program on every farm, but consists rather of assisting farmers to apply to their lands one or more of the conservation practices which they can install with little or no additional use of labor or equipment and the minimum of technical assistance. This is a practical beginning in conservation farming for which technical guidance should be made available to every farmer.

There are many areas outside of conservation districts where production can be increased substantially if technical direction and heavy equipment are made available to organized drainage and irrigation groups for such work as cleaning main drainage ditches and leveling land in order to make proper irrigation possible. Some additional heavy equipment must be secured for this activity.

Farmers and ranchers cannot safely plan irrigated crop production without authentic forecasts of irrigation water supplies. These forecasting services must be expanded to additional areas to provide more farmers and ranchers with a sound basis for determining the amount of water that will be available for the season and, therefore, what type and acreage of crops to plant.

Plan of Work: It is planned to station soil conservationists in areas outside conservation districts to spend full time in the "Widespread Application of Conservation Practices" program (see "General Plan" under "Work Under this Appropriation") and at certain times of the year to also detail personnel from districts to areas outside districts for periods ranging from 30 to 90 days. Such a program was carried on to a very limited extent in 1943 and 1944 and proved to be very effective in getting farmers to adopt one or more conservation practices on their farms. The adoption of conservation practices materially increases the productivity of such farm lands.

As in the case of special assistance to drainage and irrigation groups located in districts, cooperative agreements will be executed with the organized farmer groups outside of districts. The Service will then provide specialized engineering assistance to the groups and will lend them such heavy earth moving equipment as is needed and available.

New snow courses will be located for snow survey work and technicians will be employed to make the surveys. Shelter cabins, for the protection of the surveyors, will be constructed near isolated courses

and stocked with emergency equipment and supplies. In addition, the Service will provide specialized technical assistance in irrigation work, which is directly related to snow surveys.

(3) A net decrease of $12,190 in allotments to other agencies of the Department consisting of an increase of $7,810 relating to soil survey inspections and a decrease of $20,000 in an allotment for overall supervision and coordination of soil and water conservation programs.

CHANGE IN LANGUAGE

The estimates include proposed changes in the language of this item as follows: (Deleted matter enclosed in brackets):

Soil [and moisture] conservation [and land use] operations [demonstrations, and information]: For carrying out preventive measures to conserve soil and moisture, including such special measures as may be necessary to prevent floods and the siltation of reservoirs, and including the improvement of farm irrigation and land drainage, the establishment and operation of erosion nurseries, the making of conservation plans and surveys, and the dissemination of information, [$19,130,000] $31,275,000: Provided, That any part of this appropriation allocated for the production or procurement of nursery stock by any Federal agency, or funds appropriated to any Federal agency for allocation to cooperating States for the production or procurement of nursery stock shall remain available for expenditure for not more than three fiscal years.

This language change, deleting the words "and moisture", "and land use" and "demonstrations and information" is recommended solely for the purpose of shortening the title of the item.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	* $294,905	$ 13,479	$ 6,631
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944, and included in budget estimate, 1945)	1,473,720	3,285,325	4,401,926
Total cost of overtime (7 months in 1943)	1,768,625	3,298,804	4,408,557

*Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To secure the adoption by farmers and ranchers, on an extensive scale, of soil and water conservation practices and principles of sound land use which, when applied, assure preservation of our national soil resources, increased and sustained crop production and farm income, and protection of rivers, harbors, reservoirs, and power resources from siltation and flood damage.

The Problem and its Significance: Generally speaking, land use in the United States has not been guided by the capabilities of the land. As a result, erosion has made serious inroads, fertility of the soil has been reduced, crop yields have in many cases diminished, and the cost of farm operations has increased. Erosion, resulting from improper land use, has virtually ruined for further cultivation approximately 50 million acres of United States cropland. Another 50 million acres have been damaged in varying degrees from moderately to severely. More than half the topsoil already is gone from 100 million acres additional, and the process is under way on a third 100 million acres. There are only about 75 million acres of farmlands in the country which are not subject to erosion, and this includes land now in crops, in pasture, and in woodland. Even these lands must be carefully managed if they are to remain permanently productive. The principal means of achieving adequate and permanent conservation of soil and water resources lies in holding rain where it falls and harmonizing land use with capabilities, in so far as economic and social limitations will permit, through more effective and widespread application of established methods of erosion control.

Farmers and ranchers have been called upon to produce unprecedented quantities of agricultural commodities. The problem of meeting these demands for increased production without undue wastage of soil and water resources is a serious one. There is no question but what this country has sufficient good and potentially productive cropland which is capable of producing on a sustained basis, the food, fibre, and oils so urgently needed if only it is used in accordance with its capabilities. Much of this land, however, is too wet and must be properly drained if it is to produce to its full capacity. In the West, land leveling and the improvement of irrigation systems and methods of water application will conserve soil and water resources and increase crop yields.

It has been clearly demonstrated that the application of soil and water conservation measures to farm and ranch lands results not only in increased per-acre crop yields, but in the preservation of the productivity of the soil. The farm plant, like any other productive machinery, will break down if it is driven hard and long without great care in its management and upkeep. Every effort is being made to secure widespread recognition of the importance of farming land in accordance with its capabilities to produce, so that maximum and sustained yields may be assured.

Recurrence of the serious problems which resulted from misuse of the land during and following World War I must be prevented. Farmers, then as now, were asked to increase their production to meet wartime demands.

This was generally accomplished by plowing more acres. Later, agricultural expansion was continued in order to overcome (by volume production) the disadvantages of lower prices. During the first World War, emphasis on the expansion of wheat acreage in certain lands in the western part of the Corn Belt and in the Wheat Belt resulted in such serious erosion that the land was essentially ruined for crop production for several years. The result was the Dust Bowl and the financial ruin and forced migration of thousands of farm families. There is considerable danger of a similar mistake being made in the present war unless proper precautions are taken. For example, expansion of the acreage of soybeans is being emphasized. The growing of soybeans leaves soil in a condition which makes it even more susceptible to erosion than the growing of wheat; therefore, it is extremely important that soil conservation methods be followed in the growing of this crop.

General Plan: The general plan of operations under this sub-appropriation consists of (1) providing effective demonstrations of proper land use and of practical methods of erosion control on groups of farms in selected areas which are typical of other seriously eroded agricultural regions, (2) cooperating with conservation districts organized under State laws in combating erosion and land use problems by providing assistance to farmers and ranchers in the establishment of soil and water conservation practices on their lands, (3) cooperating with other Federal and state agencies which are in a position to assist in establishing soil and water conservation practices and sound land use on farms and ranches by furnishing such technical and other assistance as may be requested, and (4) maintaining conservation nurseries for the propagation of planting materials such as trees, shrubs, vines, and grasses, which are useful not only in controlling erosion but in providing forage for livestock, wood products such as fence, lumber, and firewood, and protection and feed for game.

Using land in accordance with its needs and capabilities means using it for the thing it is best suited to produce, whether that be meat or milk, grain or timber, fruit or vegetables, fat or fibre. The soil and water conservation and land-use measures that should be followed in order to secure proper land use and conservation of soil resources, may be modified or controlled by other factors, such as the farmer's means, the size of the farm or wartime demands for specialty crops, but the basic plans must be developed in accordance with such physical conditions as the kind of soil, degree of slope, the character and extent of erosion, and climatic conditions. These data are secured through a conservation survey or physical inventory of the land.

After the conservation survey has been completed and the needs and capabilities of the land on each farm have been determined, skilled and experienced farm planning technicians assist farmers in groups and later individually in developing farm plans. These plans are based upon the information secured from the conservation surveys and upon the farmer's resources, his choice of crops, his type of farming, and many other economic, social, and personal factors. The combination of conservation practices chosen allows for the best possible use of the farmer's land, labor, equipment, and his

ability as a manager. The farm plan charts for a specific period of time, usually from 3 to 5 years, the type of use, cultivation, and plantings that are required to accomplish erosion and water control and proper land use. For example, determination is made from information secured in the conservation survey as to the need for such soil and water conservation practices as strip-cropping, terraces, contoured fields, sodded waterways and pasture renovation, and the proper location for installation of these practices. Consideration is also given to the need for different crops and forage to meet feed requirements for present or contemplated livestock. These two broad types of information exemplify the physical and managerial factors which the farm planner and the farmer consider in developing the farm plan.

After development of the farm plan, assistance is furnished the farmer in the execution of that plan. Such equipment and planting stock as is available through this sub-appropriation or that may be supplied by the district, in the case of work within conservation districts, are also made available for use in the application of the plan.

In an effort to secure a more rapid and general adoption of soil and water conservation practices on as many farms and ranches as possible, especially in critical production areas which include large acreage of clean-tilled, soil-depleting crops, there was developed in 1943 in cooperation with other agencies, the "Widespread Application of Conservation Practices" program. This program, which is conducted during part of the year in all conservation districts and agricultural counties in cooperation with other Federal, state and local agricultural agencies, will be expanded in 1945. It is based on the application of those conservation practices which the farmer can install with little or no additional use of labor and equipment and with the minimum of technical guidance and which at the same time will contribute materially to the immediate increased productivity of the land and will protect areas where wartime production of certain crops gives rise to critical soil problems. These practices consist of such measures as contour tillage, seeding waterways and eroded areas which are damaging other lands, wind stripping, establishing cover crops, establishing new pastures and improving old ones, woodland protection, and utilizing crop residues for conservation purposes rather than burning them. For range lands such practices might include bringing herds into line with the long-time grazing capacities of the range, culling herds, deferred and rotation grazing, artificial reseeding, and growing and maintaining feed reserves.

The "Widespread Application" approach is essentially one of training local farm leaders in the methods of applying conservation practices in accordance with land-use capabilities so that they in turn can assist others. Assistance furnished by the Service consists primarily of (a) developing a list of conservation practices by local areas, (b) preparing simple specifications for practice application and maintenance, and (c) explaining and demonstrating the conservation practices to district supervisors, County War Boards, 4-H Clubs, and other local groups.

Examples of Progress and Current Program: The progress being made toward attaining the Service objective under this sub-appropriation of securing widespread adoption of soil and water conservation practices and sound land use, some of the noteworthy recent accomplishments, and comments on distinctive phases of the Service program which are receiving special emphasis at this time are presented under the applicable projects.

1. Soil and water conservation operations in demonstration projects conservation districts and cooperation with other Federal and state agencies. - This project is sub-divided into the three following work projects:

(a) Soil and water conservation operations in demonstration projects: Demonstration projects were established in selected areas typical of agricultural regions seriously affected by erosion and improper land use and where the practical solution to conservation problems had to be demonstrated to the landowners in and adjacent to such projects before a more widespread application of soil and water conservation practices could be secured. There are at present only 22 active operating projects. Fourteen additional projects are being continued during the fiscal year 1944 on a maintenance basis. The work on 148 other projects has either been entirely completed or the projects have been incorporated within the boundaries of conservation districts and the maintenance responsibilities assumed by the latter. Activity on the 14 projects which are being conducted on a maintenance basis involves only follow-up work that is necessary to keep the farm conservation plans in operation during the remainder of the period for which existing cooperative agreements are in effect, and to make such adjustments in practices as may be deemed desirable. There has been a gradual change in the demonstration program from one of large acreage carried out at a substantial cost to the Federal Government to one of small acreage and greatly reduced cost.

The demonstration projects have proved extremely valuable both in serving as proving grounds for the development of conservation methods and practices and in bringing the beneficial results of the soil and water conservation program to the attention of the public. Owners and operators of nearby farms are of their own volition studying and adopting the practices applied on farms within demonstration areas. Many interested groups of farmers and business men from surrounding counties have also toured the demonstration areas to observe the advantages of following conservation farming methods.

Very little change is anticipated under this work project in the fiscal year 1945. Funds budgeted provide for conducting approximately the same number of projects as in 1944. New projects will be established from time to time as other projects are placed on a maintenance basis or as the maintenance phase of older projects is completed. These new projects will be limited to the regions where economic distress due to misuse of the land is more advanced and to critical areas particularly affected by the present need for increased production. The primary objective of these projects will be to demonstrate conservation measures that should be applied to land where crops included in the national production goals and new to the areas are being introduced or where existing crops are being expanded to areas not usually used for cultivation.

(b) Soil and water conservation operations in cooperation with conservation districts organized under state laws: The major activity of the Soil Conservation Service is one of rendering assistance to farmers and ranchers in soil conservation districts. These districts with which the Service cooperates are local units of government organized under state laws, are under the leadership of a state soil conservation committee, and are responsible to the state legislatures. They are founded upon the sound principle of local initiative, local direction, and local control, and are formed only in response to the petition and favorable referendum vote of the land-owners and operators who are carrying on agricultural operations within their proposed boundaries. In this way, the necessary basis has been laid for the maximum exercise of initiative and responsibility by the farmers themselves.

Rapid progress has been made in the organization of conservation districts. All but three states (Connecticut, Massachusetts, and New Hampshire) have now adopted soil conservation district laws. Attached is a map showing the states in which a soil conservation districts law has been enacted and the districts established as of June 15, 1943. Eighty-five additional districts have been organized between this date and November 15, 1943. The following is a tabulation showing the organization of conservation districts during the fiscal year 1943 and districts which it is estimated will be organized in 1944 and 1945:

Date	No. of Districts Organized	No. of Farms Included	No. of Acres Included
1943 Fiscal Year			
June 15, 1942 (Actual)	771	2,121,000	451,990,000
June 15, 1943 (Actual)	902	2,365,000	516,566,000
Annual basis (District year)	837	---	---
Average per district as of 6/30/43	-	2,622	572,689
1944 Fiscal Year			
June 15, 1943 (Actual)	902	2,365,000	516,566,000
November 15, 1943 (Actual)	987	2,483,000	558,199,000
June 15, 1944 (Estimated)	1058	2,625,000	595,474,000
Annual basis (District year)	980	---	---
Average per district as of 11/16/43	-	2,347	527,598
1945 Fiscal Year			
June 15, 1944 (Estimated)	1058	2,625,000	595,474,000
June 15, 1945 (Estimated)	1190	2,883,900	664,308,600
Annual basis (District year)	1124	---	---

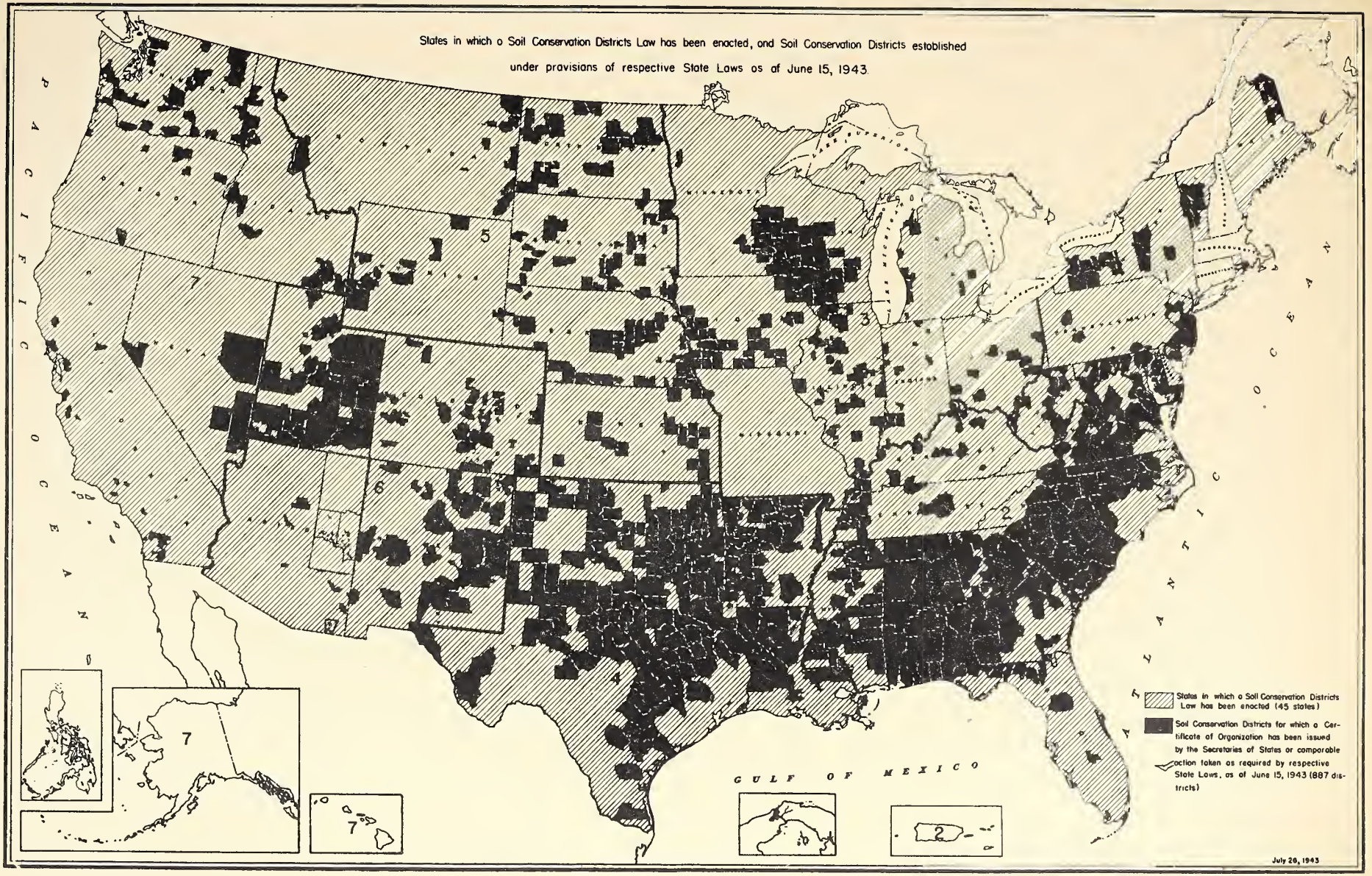
The number of conservation districts indicated as organized is based upon certificates of organization being issued by the respective states. This is the time at which the Soil Conservation Service is generally requested either by the governing body or by farmers who are assisting in organizing this body to assist the districts in making reconnaissance surveys and in developing work plans and programs before Memoranda of Understanding with the Department and supplemental agreements with the Soil Conservation Service are signed. After that time of course, other assistance is furnished to farmers and ranchers through the districts.

Soil and water conservation and sound land use are the common objectives of the conservation districts and the Soil Conservation Service. These objectives can be realized most effectively and economically by cooperative effort. The Service is making available to districts the services of trained conservationists who give technical guidance to farmers and ranchers in the preparation of farm plans and the application of conservation practices to their lands. Other assistance such as field equipment of a kind not generally readily available to farmers and ranchers within the district, materials, including planting materials, not readily available in the regular trade channels or within the economic reach of landowners and operators, and limited amounts of labor are also made available to districts. The amounts of such assistance furnished to any district are based on the district's needs and opportunity to make the greatest use of it, keeping in mind that it must be made available to the maximum number of farmers and ranchers. The district governing bodies determine the types of conservation work on which assistance that the Soil Conservation Service can make available will be used and the priority of farms on which work will be done. During the past year the demands upon the Service by districts for assistance has far exceeded that which could be made available. In a number of instances, no assistance whatever has been given districts because the help being furnished those districts with which the Service is presently cooperating is already at a rate below the minimum that is estimated to be economical and satisfactorily effective.

The district governing bodies have done an outstanding job in adjusting their programs to make the maximum contribution in increased agricultural production with the least possible wastage of soil and water resources. Many of these governing bodies have stated that the number of requests from farmers for assistance in preparing and applying farm conservation plans were at the highest point in their history. According to their statements, these requests are due to outstanding increased yields resulting from using land according to its capabilities and from establishment of soil and water conservation practices. The average of the increased yields cited was about 20 percent.

The "Widespread Application of Conservation Practices" program, which was explained under "General Plan" was carried on in most of the conservation districts during the past fiscal year with outstanding success. At the close of the year, there were 363,000 farms and ranches (both within and outside of districts) on which one or more conservation practices had been applied during the year as a result

States in which a Soil Conservation Districts Law has been enacted, and Soil Conservation Districts established under provisions of respective State Laws as of June 15, 1943.



of this activity by the Service in cooperation chiefly with the Extension Service, the Agricultural Adjustment Agency, and the Vocational Agricultural Departments. It is expected that this widespread action for better land use and conservation of soil resources will be carried forward during this and the coming year with equal or greater success. One step at a time means a practical beginning within the reach of every farmer, which can eventually be developed into a complete program of soil and water conservation and proper land use.

(c) Cooperation with other Federal and state agencies: In order to employ every available means for encouraging adoption of soil and water conservation practices and to create a greater public consciousness of the erosion and land use problems, close cooperation is being maintained with other Federal and state agencies which are concerned with conservation work and sound land use.

There are, at the present time, 38 employees cooperatively employed with the Extension Service in 35 states and Puerto Rico. These men assist in the development of local conservation programs in cooperation with county agents, assist in developing the educational material to be used in the "Widespread Application of Conservation Practices" program, and disseminate information regarding the general Service program to conservation districts and other state agencies which are cooperating to secure better land use.

The "Widespread Application of Conservation Practices" program in areas outside of demonstration projects or conservation districts is financed from funds budgeted under this work project. What was said regarding the success of this program under the "districts" work project applies with equal emphasis here. According to reports received, farmers all over the country have demonstrated how the various conservation practices, used separately or in combination, have boosted crop yields. Additional funds are being requested to expand the "Widespread Application" program to all agricultural counties in the country. Although this is only part of the complete conservation program necessary to establish and maintain erosion control, it is that part which can make its greatest contribution to increasing production now, while at the same time permitting a minimum of soil wastage.

Limited snow survey operations were carried on in the Western states during the past year, but highly satisfactory results were obtained from the skeleton network of established snow courses. A request for additional funds has been made under this work project to provide for expansion of this phase of the Service program. The major part of the water supply of the Western states is derived from the snow that accumulates at high elevations. Forecasting the water supply is a service of extreme importance to farmers, ranchers, shippers, bankers, and agencies concerned with power production, water supplies and flood control. Dependable estimates of the run-off from the various drainage basins can be made from measurements of the snow pack after the accumulation of snow has reached its maximum. For more than 30 years, forecasts have been made on the data obtained

by making measurements of the water content of the snow that accumulates during the winter. Farmers have come to rely upon the forecasts of irrigation water supplies to determine what types of crops to plant and whether the potential water supply will permit expansion of acreage to be cultivated.

Additional snow courses should be established to meet the general demand for irrigation water supply forecasts. The snow courses are, for the most part, in isolated areas accessible with difficulty, and are as far as 30 miles from the nearest roads and habitation. Snow surveyors are required to travel in pairs for safety, but even so the job is difficult and dangerous. To protect the men, particularly in cases where they may be caught by severe storms or in accidents, shelter cabins must be constructed at or near isolated courses and on trails to the more distant ones and stocked with stoves, bedding, first aid materials, and emergency food supplies. Cooperating agencies have been furnishing most of these facilities and supplies, but their resources are inadequate to permit further expansion of this activity. In addition there will need to be purchased snow tubes, wrenches, scales, snow-shoes and skiis. Brush also must be cleared from the measurement areas each year.

Under this item, $10,000 out of the 1944 appropriation is being devoted to snow surveys and $85,000 of the 1945 budget is proposed for this work and special irrigation assistance related to snow surveys. Of this amount, $60,000 will be devoted to snow surveys proper and $25,000 will be used for related work such as specialized technical guidance in making the best possible use of irrigation water and recommending measures to control floods, and to conserve water during periods of drought. (For snow survey work under the item "Soil Conservation Research" see page 219 of these notes.)

The Service has made available to the armed services whatever assistance they have requested in erosion control, drainage and flood control operations, protection of water supply systems against sedimentation, camouflage, and similar protective and facilitating activities on and near camp sites, cantonments, air fields, and other military areas, and will continue to respond to calls for assistance with all of its available facilities.

2. Operation of conservation nurseries for furnishing of plants for use in soil and water conservation operations: The revegetation of eroded areas to which conservation measures are applied in demonstration projects and conservation districts is dependent to a considerable extent upon the maintenance of an adequate supply of suitable planting materials and upon the development of new propagation and cultural practices. The thirty nursery units which are operated under this project produce or purchase plants and seeds, collect them from wild habitats for propagation, conduct observational studies to determine the best types of plants for specific planting site conditions, and search for or develop new strains of

plants and grasses which are exceptionally well suited for erosion control purposes.

During the 1943 fiscal year, work under this project was adjusted to meet the decreasing demand for woody plant material and the increasing demand for production of grass and legume seed. Many acres formerly devoted to the production of trees and shrubs were converted to seed production as rapidly as possible. This conversion will be continued in 1944. The grass and legume seeds that are being produced are of highly selected and improved strains not available in the open market and are intended to serve as foundation stock for production on a much larger scale on the farms and ranches throughout the country.

Farmers and ranchers have made serious efforts to quickly improve their pastures and ranges because of the increased demand for beef and dairy products. Assistance will be given them in increasing the productiveness of their pastures and much of their hitherto waste lands by not only indicating the soil and water conservation practices that should be followed but by supplying them with small quantities of seed of native species of grasses, and newly developed strains of grasses and legumes. The Service has collected seed from many native stands of forage crop species to be used to put a vegetative cover on lands needing reseeding. It has also encouraged cooperators to collect these seeds and to produce as much of their own farm crop seed requirements as possible. Technical assistance and the use of equipment has been furnished for this purpose. It is expected that during the current fiscal year, due to the shortage of forage crops and urgent need for increasing the production of livestock and dairy products, that even greater emphasis will be placed on the collection of native grass seeds.

(d) Conservation and Use of Agricultural Land Resources
(Allotment to Soil Conservation Service)

This budget schedule covers obligations for technical and related services and equipment under an allotment for assisting farmers in carrying out drainage and irrigation activities approved under the 1944 Agricultural Conservation Program in order to provide increased production during the present emergency.

(e) Emergency Erosion Control, Everglades Region, Florida

Appropriation Act, 1944	$72,248
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+9,461
Total anticipated available, 1944	81,709
Budget estimate, 1945	72,248
Decrease	-9,461

PROJECT STATEMENT

	1943	1944 (estimated)	1945 (estimated)	Increase or Decrease
Soil conservation control measures including research and demonstrations in fire control, drainage, and irrigation, to eliminate fire hazards and subsidence in the peat soils of the Florida Everglades area	$ 70,366	$ 81,709	$ 72,248	- $ 9,461(1)
Covered into Treasury in accordance with Public Law 674	3,400			
Unobligated balance	1,882			
Total available	75,648	81,709	72,248	- 9,461
Anticipated deficiency for overtime pay	---	-9,461	---	
Total estimate or appropriation	75,648	72,248	72,248	

DECREASES

(1) The decrease of $9,461 in this item for 1945 will be accomplished by curtailing the employment of temporary field assistants.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	$3,217	---	$8,078
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944, and included in budget estimate, 1945)	---	$9,461	---
Total cost of overtime (7 months in 1943	3,217	9,461	8,078

WORK UNDER THIS APPROPRIATION

Objective: The stabilization of the ground-water table in the Everglades region of Florida by controlled drainage and water-holding dykes, levees, and other mechanical structures for the elimination of fire hazards and conservation of water and soil resources.

The Problem and its Significance: The Everglades area of Florida consists of approximately 2,700,000 acres of peat and muck land with an elevation of 10 x 16 feet above mean sea level. About 30 years ago, drainage outlet canals were constructed to drain the area. Since that time, approximately 125,000 acres located in the northern part of the glades have been placed under cultivation and now produce a large part of the early winter vegetables used by the Nation and a substantial amount of sugar cane. It has been found that uncontrolled drainage lowers the ground water table in the area and has been conducive to excessive damage by fires and even more serious soil deterioration through the slow oxidation of the organic soils. Practically all of the cultivated land and a considerable amount of the virgin peat land has subsided as much as 5 feet or more since drainage. This lowering of the ground surface has complicated drainage problems by reducing the capacity of the outlet ditches to such an extent that difficulty is being encountered in disposing of storm waters from some of the land already under cultivation, while during dry periods uncontrolled drainage has lowered the water table to such an extent that the peat soils tend to dry out and present a serious fire hazard.

A large part of the Everglades area is unsuited for agricultural development because of the depth and character of the peat and muck soil and the underlying strata, and before additional land is brought under cultivation, the areas suitable for cultivation should be determined and a sound method of water control should be developed that will permit satisfactory drainage, conserve the soil, and reduce fire hazards. Under existing war pressure to expand food production, the area under cultivation is rapidly increasing. Past experience clearly shows the dangers to the natural resources and to the landowners involved in such an expansion unless the program is based on sound technical data and carried out under competent technical direction.

General Plan: There is a general realization on the part of landowners in the Everglades area that water control is essential to the sound development of the region and that a dependable program of expanding agricultural production and reducing fire hazards in the region cannot be planned without the technical data being obtained under this project. The Governor of Florida, realizing the complex problems involved, has designated the Board of Commissioners of the Everglades Drainage District to carry out a program of land use and conservation based upon work under this project. He has also appointed a committee composed of representatives of the State and Federal agencies involved in various phases of the program to advise of the work.

The soil and water conservation research and demonstration activity of the Service in the Everglades area has included such items as topographic and land use capability surveys, construction of dykes, spillways, dams, and other water control structures, studies of runoff, seepage, and evaporation, and development of water management and fire prevention practices.

Federal expenditures are matched by at least equal expenditures for the same purpose by the State or political subdivisions thereof, thereby doubling the effectiveness of Federal expenditures.

Examples of Progress and Current Program: Investigations are under way to develop accurate information relating to topography, soils and underlying strata and their hydrologic relation to water control problems. Studies are being made regarding the effect of height of water table on the amount and quality of growth of cultivated crops and pastures. Experiments are being carried on with methods of regulating water stages in the outlet canals that will permit the drainage of the agricultural lands during storm periods and at the same time tend to maintain high ground water levels that will reduce fire hazards and conserve soil by decreasing the amount of subsidence. Installations of dykes, ditches, and pumps on experimental areas have been made to determine the feasibility of controlling water table elevations on various depths and types of soil and substrata by means of dykes and pumps.

Sufficient progress has been made with the phase of the work relating to topography, soils and underlying strata, to justify the preparation of a preliminary map outlining the areas deemed suitable for agricultural development, and those deemed suitable only for conservation areas, or the storage of water. The data indicates that there is less than half a million acres of land in the Everglades with sufficient depth of peat or muck soil, and the type of underlying strata necessary for sound agricultural development, instead of the two million or more acres that has generally been considered available for such use. This knowledge is of vital importance in planning for the future development of the area.

The Everglades Fire Control Board and the Everglades Drainage District are cooperating in the construction of a number of experimental dams in the outlet canals to control water stages. The dams are of the flash board type and are so constructed that the flash boards can be readily removed during storm periods to permit the discharge of excess water from surrounding areas. During other times the water in the canals is held at high stage and all excess water is discharged onto the lower glades to raise the water table in that area. One dam has been in operation for the past year and while the data obtained is limited, the indications are that such structures will be reasonably effective if properly operated.

Pumping tests from wells on comparatively shallow peat overlying porous Miami and Tamiami limestones indicate that seepage through the underlying limestone is so great that it is impracticable to control the water table by pumping to drain the land sufficiently to grow crops. Experience in the cultivated areas where the peat soil is relatively deep and is underlain by the more impermeable Ft. Thompson limestone shows that in such areas dyking and pumping is a practical method of securing drainage and water control. Experimental ten-acre areas located on different types of soil

have been dyked and equipped with ditches and pumps, and investigations are underway to determine the limitations of such a method of water control.

During storm periods, the runoff from areas already under cultivation exceeds the capacity of existing drainage outlet canals with the result that crops are frequently damaged during such periods. A section of undeveloped land has been dyked and arrangements have been made to pump water from cultivated land onto the dyked undeveloped area to determine if excess water can be successfully disposed of in this manner without damage to surrounding areas.

(f) Farm and Other Private Forestry Cooperation
(Allotment to Soil Conservation Service)

This budget schedule covers obligations under an allotment from the appropriation "Farm and Other Private Forestry Cooperation", for cooperation with States in carrying out farm forestry operations to encourage the conservation and development of the farm woodland as a productive unit and integral part of the farming business through demonstration, on representative groups of farms, of the effect of sound woodland management on farm economy. The appropriation is discussed in its entirety in the notes under the heading "Farm and Other Private Forestry Cooperation" (see Forest Service).

(g) Flood Control General (Transfer to Agriculture)
(Allotment to Soil Conservation Service)

This budget schedule covers obligations under an allotment for (1) preliminary flood control examinations and surveys in the fiscal years 1943 and 1944, and (2) for prosecution of flood control work, water flow retardation, and soil erosion prevention in the fiscal year 1943. No new preliminary examinations and surveys were inaugurated in 1944. Obligations shown for that year represent costs of terminal leave as all work under this item was suspended as of June 30, 1943.

(h) Special and Technical Investigations, International Joint Commission, United States and Great Britian
(Transfer to Soil Conservation Service)

This budget schedule covers obligations under a transfer from the State Department for special and technical investigations in cooperation with the International Joint Commission of the United States and Great Britian, in appraising the results of increasing the ground water table of lands adjacent to Kootenai Lake in Northern Idaho. This is a service performed for the State Department to secure technical data required in connection with treaty obligations.

(i) Emergency Relief, Agriculture, Planning and Review of W.P.A. Projects
(Transfer to Soil Conservation Service)

This budget schedule covers obligations, in the past fiscal year for planning and review of W.P.A. projects.

(j) Emergency Fund for the President, National Defense
(Transfer to Soil Conservation Service)

This budget schedule covers obligations in the past fiscal year under a transfer for the payment of travel and special per diem allowances in connection with decentralization of certain employees from Washington, D. C. to the field.

(k) Working Funds, Soil Conservation Service

This budget schedule covers obligations under advances pursuant to Section 601 of the Economy Act of June 30, 1932, for technical and other services performed for the War Department and various other Federal Agencies, as shown in detail in the "Statement of Obligations Under Supplemental Funds" appearing at the end of these notes for the Soil Conservation Service.

(1) Land Utilization and Retirement of Submarginal Land

Appropriation Act, 1944	$1,126,120
Anticipated deficiency for overtime pay required by the War Overtime Pay Act of 1943	+182,755
Total anticipated available, 1944	1,308,875
Budget estimate, 1945	1,250,000
Decrease	-58,875

PROJECT STATEMENT

Project	1943	1944 (estimated)	1945 (estimated)	Increase or decrease
1. Acquisition of land	$129,176	$40,271	$28,106	-$12,165 (1)
2. Development and management of land acquired	1,373,284	1,268,604	1,221,894	-46,710 (2)
Covered into Treasury in accordance with Public Law 674	5,860	- -	- -	- -
Unobligated balance	14,842	- -	- -	- -
Total available	1,523,162	1,308,875	1,250,000	-58,875
Transferred to other appropriations (as shown in Budget schedules)	+148,020	- -	- -	
Anticipated deficiency for overtime pay	- -	-182,755	- -	
Total estimate or appropriation	1,671,182	1,126,120	1,250,000	

INCREASES OR DECREASES

The decrease of $58,875 in this item for 1945 consists of:

(1) A decrease of $12,165 under the project "Acquisition of land". This is due to a reduction in the volume of work incident to closing land acquisition cases and completion of records. Land purchases were discontinued at the close of the fiscal year 1942 and the funds budgeted under this project provide for completing work carried over from that year, maintaining proper land title records, and handling exchanges of land.

(2) A decrease of $46,710 under the project "Development and management of land acquired". This will be accomplished by the curtailment of details of soil conservation farm planning technicians to this activity and by reduction of administrative expenses.

Statement of Overtime Costs

	1943	Est. 1944	Est. 1945
Overtime absorbed	*18,554	- -	- -
Additional funds for overtime (appropriated, 1943, estimated supplemental, 1944; amd included in budget estimate, 1945)	80,000	$ 182,755	$ 174,193
Total cost of overtime (7 months in 1943)	98,554	182,755	174,193

* Difference between overtime cost and supplemental appropriation.

WORK UNDER THIS APPROPRIATION

Objective: To rehabilitate areas blighted by the misuse of submarginal land and land not primarily suitable for cultivation through the acquisition, development, and management of such lands so as to bring about necessary changes in land use, provide opportunities for farm families to meet the essentials of life and health, and improve the general economy of rural communities.

The Problem and its Significance: In many areas, a substantial amount of the acreage in cultivation or subject to cultivation is not suitable for that use because of natural infertility, physical factors, location, or loss of productivity through misuse. Continuing the cultivation of such acreages has resulted in further soil deterioration, lowering of the standards of living, shrinkage of the local tax base, and an increase of the local relief load. Families occupying submarginal farms are usually stranded in their present locations because there is no market for their properties. Their income has gradually declined until they no longer have sufficient financial resources to relocate elsewhere. Also, in many cases the land has so deteriorated

that, even if operators on better land in the area could obtain title to this land without cost, they could not afford to rehabilitate it.

Solution of the human, land, and governmental problems in these areas where a substantial number of the farms are unsuited for cultivation can be brought about only by drastic changes in land use and occupancy. These adjustments are generally so far-reaching as to be beyond the ability of both individual families and local governments to bring about. The authority contained in Title III of the Bankhead-Jones Farm Tenant Act provides for making the necessary changes in land use and occupancy, and the means whereby, through the coordination of the public programs and the cooperation of local governments, rehabilitation of land and people on submarginal farms can be permanently effected.

The Soil Conservation Service is responsible, under this item, for the management and development of some 7 1/4 million acres of submarginal lands which were acquired under the authority of the National Industrial Recovery Act of 1933, the Emergency Relief Act of 1935, and Title III of the Bankhead-Jones Farm Tenant Act of 1936. When acquired, these lands were striking examples of the consequences of erosion and improper land use. Approximately 1 1/2 million acres of the land acquired were found suitable for forestry or recreational purposes and practically all of the balance is suitable only for grazing and pasture.

Most of the latter was in need of stock watering facilities, fences, and controlled grazing. About 1,100,000 acres of the land found suitable for grazing required more specialized treatment in order to place it into productive use consistent with its capabilities. This treatment consisted of general soil stabilization activities and the establishment of a satisfactory vegetative cover through seeding and other treatment. It is estimated that on July 1, 1944, there will remain about 400,000 acres urgently in need of this specialized treatment in order to bring it into production.

The grazing and pasture lands now in production on the Land Utilization Projects are utilized to materially increase the production of beef, mutton, wool, and other animal products. Such land is made available under use permits at equitable rates to livestock owners living on adjacent farms or ranches.

General Plan: The plan of operations under the Land Utilization program of the Service generally provides for surveys being made of areas of land submarginal for cultivation to ascertain the land use, economic and other pertinent problems of the area, and to determine which tracts of land must be purchased in order to permit correction of the problems. If funds are available, the tracts of land which have been marked for acquisition are appraised to determine their fair market value and options to purchase are obtained. (The land purchase phase of the program has been deferred. No new lands have been purchased under

this item since June 30, 1942, and no purchases are contemplated in the 1945 fiscal year.) After title examination and other legal proceedings are completed and the land has been purchased, plans for development and improvement are prepared and carried out as rapidly as available funds and physical factors will permit.

The development activities of the Service on lands acquired consist of such general types of work as erosion control; establishing proper vegetative cover on abandoned crop land; reseeding pastures and grazing land; tree planting; constructing fire breaks and trails, roads, lookout towers, and telephone lines; developing wells and springs; and constructing stock watering facilities and fences. Management activities include making the lands available to local people for grazing, timber harvesting, cropping, fishing, hunting, and other purposes through use permits, maintenance and repair of facilities, patrolling and firefighting, and disseminating of information on soil and water conservation practices and sound land use to the users of the land.

Examples of Progress and Current Program: Examples of recent accomplishments under this appropriation and phases of the work on which special emphasis is being placed at this time are cited under the following projects:

1. Acquisition of land: The funds requested under this project are for expenditures which are classified as acquisition costs. Even though land purchases have been deferred and no new purchases are contemplated in 1945, as long as the Soil Conservation Service administers federal lands there will necessarily be some costs which are considered as expenses under this project. The work involved includes clearance of title; handling of boundary disputes and questions regarding title, including the reservations in the title; appraising, title examination, and recording in connection with land exchanges; and the handling of transfers of land between the Service and other government agencies. There are also claims from county tax officials to settle, final closing title searches, and payments to be made to land owners of funds which have been placed in the outstanding liabilities account of the General Accounting Office. In addition, provision must be made for the proper disposition of land purchase funds withheld from payment to blocked nationals.

Files covering correspondence, records, and legal documents are maintained on approximately 55,000 individual land purchase transactions. The case history of each land purchase transaction must be reviewed and completed if any required documents are missing, and a final check made of the land acquisition map before the case file can be sent to the National Archives for permanent filing.

2. Development and management of land acquired: With funds available in 1944, it is planned to treat about 110,000 acres of formerly cultivated and run down, low producing pasture lands so that they may be placed in productive use as grazing areas or hay meadows. It is estimated that more than 90% of the work will consist of range and pasture development, hay and crop land improvement and erosion control. The balance of the work will include forest and wildlife development, miscellaneous items and administrative facilities. Some of the more important improvements completed under this project during the calendar year 1942 (amounts are comparable to 1943 fiscal year) were the seeding of 83,000 acres of unproductive formerly cultivated or abandoned cropland to perennial grasses and legumes; construction of 675 miles of fence; 413 livestock watering facilities (131 dams, 118 springs, 34 dugouts and 131 wells); two fire lookout towers; the construction or plowing of 2,480 miles of fire breaks, and the construction of 85 miles of administrative roads and trails. In addition, 62 fire tool caches were constructed, equipped, and placed.

The pasture and range improvements listed make it possible to provide grazing for an additional 13,000 head of cattle for a six months' period each year.

There were 4,996 grazing permits issued, during the 1942 calendar year, on lands previously developed and improved which provided 1,175,615 animal unit months of grazing.

One area of submarginal land in New York State approximating 6,000 acres on which less than half of the planned improvements have been made is furnishing supplementary grazing for 735 cattle, 87 horses, and 1,869 sheep owned by 128 dairy and livestock farmers in the surrounding area. Growing stock are usually placed in these pastures where they graze in common with stock owned by other operators. This project points the way to more beneficial use of large acreage of lands not suitable for crop production but which can be developed successfully for pasture use. It is also demonstrating how groups of farmers can cooperate in controlling and utilizing lands of this nature which are distant from their dairy and livestock farms.

Unimproved pasture in the area of the Cedar Creek Project in Missouri normally produces 15 to 20 pounds of meat per acre per year. On improved areas on this project, and on adjoining improved privately-owned lands, the meat production is averaging from 200 to 225 pounds per acre per year.

The grazing, cropping, and other uses during 1942 produced revenue of approximately $299,195 of which 25%, or approximately $74,000, is payable in lieu of taxes to counties in which the lands are located. It is estimated that the revenue collected for 1943 will total around $450,000, of which $112,500 will be payable to counties.

The financial returns to the Government and to the counties, though substantial, are not, however, all-important. The greater part of the benefits derived from the improvement and management of the range is what the people are getting out of it, and its contribution to the national welfare. Most of the people using these lands did not have sufficient range or pasture before the reseeding was done. Part of the lands used for grazing was in the hands of absentee owners and the operators were able to get only one-year leases. Under such conditions, the range was seriously abused, water and other needed facilities were not provided and the operators were unable to make headway. But now they have grass for their stock and stability of operations, and they are contributing in a very important way to increased production of food.

(m) National Industrial Recovery, Public Works Administration
(Allotment to Soil Conservation Service)

This budget schedule covers obligations under an allotment for development work on the Crab Orchard Land Utilization Project located at Carbondale, Illinois. The work for which these funds were made available will be completed in the 1944 fiscal year.

(n) Payments to Counties from Submarginal Land Program
Farm Tenant Act (Permanent Appropriation)

This item reflects the payment to counties of twenty-five percent of the net revenues received each calendar year from the use of lands held by the Secretary under Title III of the Farm Tenant Act, approved July 22, 1937.

STATEMENT OF OBLIGATIONS UNDER SUPPLEMENTAL FUNDS

Item	Obligations, 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Cooperation with American Republics (transfer from State Department):			
Training in soil conservation of trainees from other American Republics 1/	- -	$31,271	$36,390
Conservation and use of agricultural land resources:			
Assisting farmers in carrying out soil and water conservation practices under 1944 conservation program	- -	500,000	- -
Farm and other private forestry cooperation (allotment to Soil Conservation Service):			
Cooperation with States in carrying out farm forestry operations, including intensive projects and technical service to farmers and legally competent and adequate organizations of farmers	123,516	146,788	146,788
Prairie States farm forestry	72,981	- -	- -
Total	196,497	146,788	146,788
Flood control, general (transfer to Agriculture etc.:			
Winding up preliminary examinations and other work	95,201	4,700	- -
Special and technical investigations, International Joint Commission, United States and Great Britain (transfer to Soil Conservation Service):			
Cooperating with State Department to secure technical data needed in connection with treaty obligations	1,428	1,500	1,750
Emergency relief, Agriculture, planning and review of W.P.A. projects:			
Covers past year allotment for this purpose, activity discontinued	711	- -	- -
Emergency fund for the President, National Defense (transfer to Soil Conservation Service):			
Expenses connected with decentralization of certain employees to field	471	- -	- -

Item	Obligations 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
Working Funds (Soil Conservation Service):			
Advances from War Department:			
Land acquisition costs (except direct cost of land) incident to the purchase of land for military purposes	917	- -	- -
Providing information of a military nature to the Corps of Engineers	8,599	- -	- -
Reproduction of safety posters and Air Forces news letter	6,033	- -	- -
Mapping of strategic areas for the Corps of Engineers	400,593	528,258	- -
Research, compilation, and drafting of aeronautical approach charts	182,662	- -	- -
Transliteration of Chinese maps for the Army Map Service	959	2,676	- -
Supplying detailed rainfall records to the office of the Chief of Engineers	1,814	- -	- -
Compilation and drafting of planimetric maps and charts of foreign areas	- -	189,000	- -
Special mapping projects for the Army Air Forces	- -	77,458	- -
Total, War Department	601,577	797,392	- -
Advance from Office of Inter-American Affairs:			
Comprehensive training of Latin American technicians in the principles and practices of soil and moisture conservation and proper land-use	57,441	25,250	- -
Advance from Public Buildings Administration:			
Providing wartime security for field cartographic laboratories	- -	36,354	- -
Advance from Public Roads Administration:			
Furnishing of hydrologic information to the Public Roads Administration	3,871	2,529	- -
Advance from Selective Service System:			
Technical direction of program for civilian public service projects for conscientious objectors	- -	204,254	- -
Advance from State Department:			
Cooperation with the Chinese Government in the study of agricultural problems in China	5,251	8,129	1,671
Total, Working Funds	587,739	1,068,244	1,671

Item	Obligations 1943	Estimated Obligations, 1944	Estimated Obligations, 1945
National Industrial Recovery, Public Works Administration (allotment to Soil Conservation Service):			
Completion of development under way on various land utilization projects	80,401	4,664	- -
Total Obligations Under Supplemental Funds ...	1,042,849	1,762,831	186,599

1/ Budget schedule for this item appears under the State Department section (see page 625).

PASSENGER CARRYING VEHICLES

There is included in the budget estimates for the Soil Conservation Service the sum of $499,000 to provide for (1) the operation, maintenance and repair of 1,524 passenger-carrying vehicles at a cost of $367,500, and (2) the replacement of 130 of these vehicles (100 new and 30 used), or approximately 9 percent of the total fleet, at a net cost of $131,500 with exchange allowances taken into consideration. No funds are requested for the purchase of additional passenger-carrying vehicles.

Of the total number of passenger cars owned and operated by the Soil Conservation Service, one vehicle is used for passenger transportation on official business in the District of Columbia. The remainder of the vehicles are used in the field to provide transportation for technicians to experimental plots, farms, and ranches in outlying areas which are not readily accessible to common carrier transportation. The activities of these technicians include assisting farmers and ranchers in the planning and application of soil and water conservation practices; the installation of experimental plots and equipment; collecting research data and servicing scientific instruments; and carrying out the work of development, management and protection of land acquired by the Government.

The Soil Conservation Service policy is and has been to conserve passenger-carrying equipment to the utmost by using it only for essential field research and operations activities in areas where other means of transportation are either inadequate or non-existent. Should the Service be unable to procure the vehicles intended to replace badly worn equipment, the funds requested would be needed for additional repair expenses and to secure transportation by other methods. If it becomes necessary, it is planned to authorize the use of personally owned automobiles on a mileage reimbursable basis.

In 1940, a policy was established which provided for trading in 20 percent of the total automotive fleet each year. The average age of each vehicle traded in, had it been possible to carry out this policy, would have been five years and the average mileage approximately 75,000 miles. Because

of the war emergency, however, and the limited availability of cars, the Service was unable to carry out a program under this policy. The average age of the fleet, therefore, has increased materially. By July 1, 1944, it is estimated that 40 percent of the fleet will have been in operation seven years or more.

The 130 vehicles to be purchased in 1945 will replace an equal number of cars, all of which will be 1936 models or older and which will have an average mileage in excess of 100,000 miles.

In order to keep the fleet operating satisfactorily during the emergency and to insure adequate transportation facilities, it will be necessary to intensify the program of maintenance and repair and to continue to exercise extreme care in the use of vehicles.